

THE COCKRELL BRUSH SCOURER.

THE Link Belt Machinery Co., of Chicago, has just placed on the market this machine which, if we may judge from the claims made for it, certainly merits investigation by the milling fraternity, and will no doubt receive a considerable share of attention. The Cockrell Brush Scourer is claimed to be a decided improvement on this class of machinery in every essential respect. This arises from a change in the character of the principal working parts, namely, the brush and the case. We give below an accurate description of these features, and presume that those acquainted with this class of machinery will readily appreciate the claimed superiority over the similar parts in other makes of brush machines. It has long been conceded, says the Link Belt Company that the function of the brush is to furnish a durable and elastic means of beating the wheat against the scouring case, so that by the continuous rebounding and rebounding of the wheat from brush to case it becomes scoured, cleaned and polished. The brushes of this machine are made of steel wire imbedded in leather and firmly fastened to wooden segments, about eight inches wide, extending the whole length of the case, and between these segments is a space of two or three inches in which beaters are placed. It would appear that this form of brush would be too severe, but practice, it is asserted, has proven that it is not.

The case of the Cockrell Brush Scourer is made of woven steel, welded at the intersections, and hardened and partially flattened over its entire surface. The hardened steel makes it a more than ordinarily durable case. The welding makes it solid and rigid. The woven feature gives the maximum of ventilation, and the flattening of the projections of the woven case presents a surface to scour the wheat of a peculiarly favorable character. No sharp edges are presented to the wheat, as in the perforated metal cases. No shelves or rings to keep the wheat from falling too rapidly are required. The very nature of the woven case furnishes it as asserted a better means of retarding the fall of wheat, while the surfaces will not wear smooth like those of cast iron.

The suction from the fan of this machine takes the dirt through the case as soon as cleaned from the wheat. It removes all adhering impurities to the bran coating of the wheat berry. It removes the fuzz from the ends. It takes out much of the dirt from the crease, and leaves the wheat cleaned, polished and nicely rounded at the ends. It does not abrade the wheat. The speed of this machine is said to be less than that of any other, and the danger from overheated journals is thus proportionately less. The brushes and case we are told are longer than any other machine in the market. The manufacturers who, by the way, are already well known to the entire milling fraternity as makers of Ewart's detachable link belting for transmitting power and motion, an article which is widely and extensively employed in flour mills and grain elevators, will, with pleasure, respond to any

inquiries our readers may make, and furnish details which the limits of our space will not permit.

WHEAT IN INDIA.

To the San Francisco *Call* John F. Swift writes: The British rule, as compared with that of the semi-independent native princes, struck me favorably, and I have no doubt that the country in general will steadily improve under it. The point that strikes one most in this direction is the manner in which the governing race arranges the laws, so far as possible, in accordance with the long-established usages of the country. The horrible suttee and similar diabolical practices have been abolished, and the rights of person and property have been in

immense, for if a line be drawn from north to south through the country, it will be found that wheat can be raised on almost all the lands west of that central line, while the eastern lands are better suited for rice-growing. In considering the possible product from this great wheat territory the fact must be borne in mind that the soil is very rich, and that at least two crops can be raised upon it every year, the one being watered by the clouds during the rainy season, and the other by irrigation during the times of drouth. Owing to the extreme cheapness of labor the irrigating systems can be economically extended, and wherever these latter may be established the success of the crops will be assured. After traveling pretty well over the country I found

Almost all the land belongs to the Government, and in order to increase the product of wheat it will only be necessary to enforce similar rules to those at present employed with regard to opium. In certain districts a given proportion of each patch of land must be annually devoted to the production of opium. The Government is the sole buyer of opium, and fixes its own price upon the article—the result being an average annual profit to the Government, upon that commodity, of about \$100,000,000. The Dutch successfully employ a similar system with regard to coffee in Java, and if the British were to enforce a kindred rule in the possible wheat districts of India the production of that cereal would be enormously increased. I may remark in this connection that I saw plenty of wheat ready for harvesting by the middle of January.

GRAIN TARIFF IN GERMANY.

As an answer to those who agitate an increased tariff on breadstuffs in Germany, Mr. H. Nordman publishes a series of interesting statistics in the *Vierteljahrsschrift fuer Volkswirtschaft*, from which we translate the following:

According to the census of 1883, stock farming, with the exception of swine, has made but little progress in Germany. The number of cattle has increased during the past ten years in Prussia only 1.11 per cent., while sheep have decreased during the same period 25.15 per cent. During the period of 1861 to 1864, on the other hand, cattle increased 8.5, and sheep 10.7 per cent. After comparing these figures with the prices of grain, the author concludes, that stocks are increased when grain prices are low, but since 1867, when the prices of grain increased, stock farming is diminished. As tariffs always increase the price of grain, any addition to these tariffs would indirectly cause a further diminution of the value of stocks. Higher grain prices induce the farmer to neglect his stock for the sake of grain culture; the soil becomes more and more exhausted, the harvests smaller and the cultivated area has to be increased in order to meet the demand. As a consequence the condition of agriculture was unfavorable even under the very favorable meteorological conditions of 1882. With an abundance of straw the ears of the grains remained poor, as always on exhausted soils.

It seems plain that the grain tariff which, at any rate, does not benefit the small farmer, injures even the larger land owner by its reaction on stock farming and the quality of the soil. There are only those few left who pursue grain production on an extensive scale and therefore have a direct interest in the increase of the grain tariffs; they, of course, do everything in their power to induce the small farmer and laborer to vote for protection and high tariff on breadstuffs.

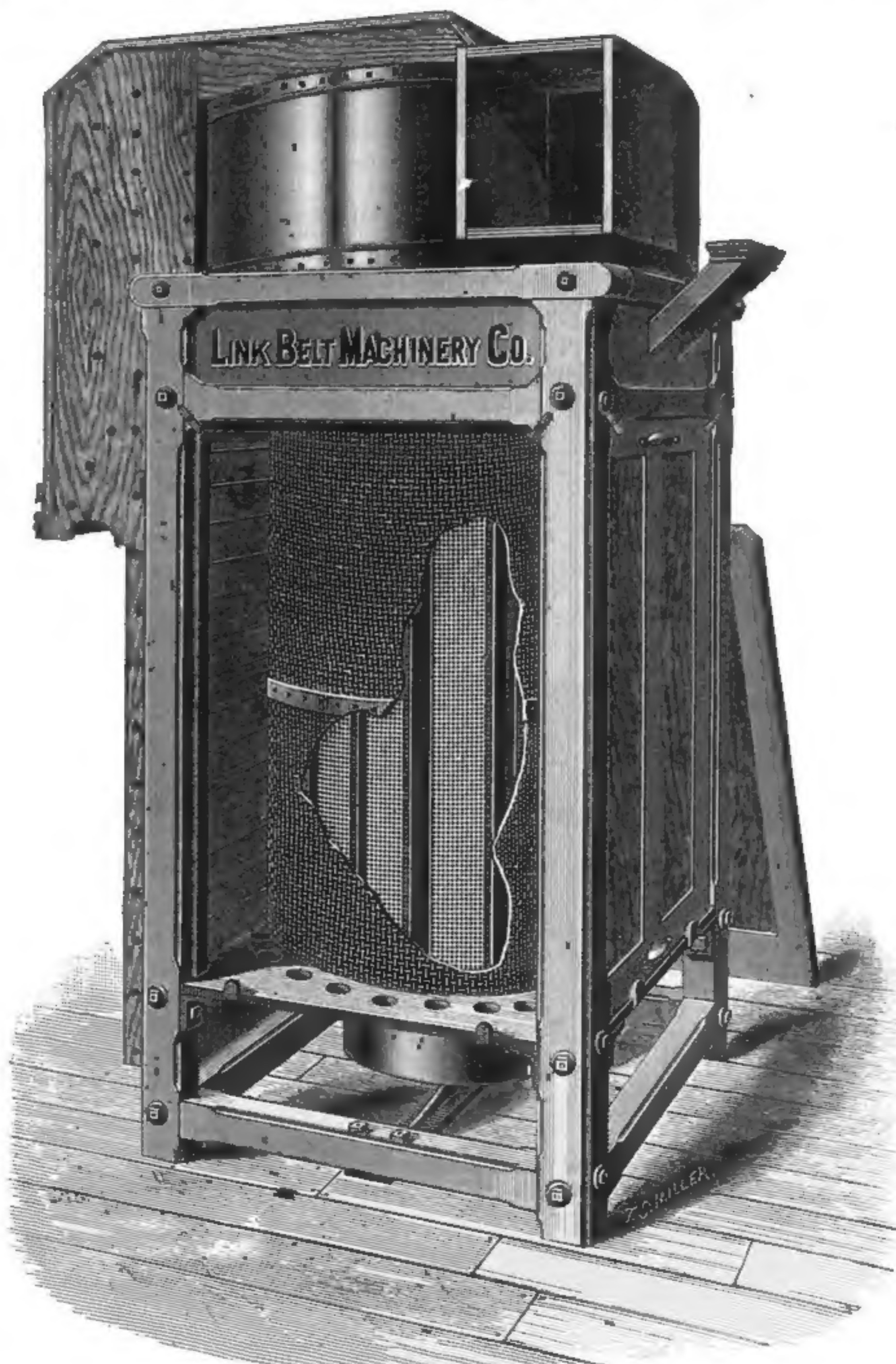
"What is the heaviest thing in the world?" asked young Sharply of his landlady, as he poised a biscuit in his hand.

"I should say it was money."

"Ah?" inquired the young man.

"Yes, because you never seem strong enough to raise sufficient to pay your board when it is due."

Mr. Sharply eats now without asking conundrums.



THE COCKRELL BRUSH SCOURER.

many respects strengthened, but care is evidently taken to make all the necessary changes gradually, so that native opposition may not be recklessly aroused. The British tenure of India is none too certain, and can only be retained by a prudential conciliation of the millions who are governed by a handful of whites. If the present system continues, as it probably will, I can see no reason why India should not become one of the greatest wheat-producing countries of the world, and so far as that product is concerned a successful competitor against the more temperate regions, where only one crop can be produced in each year, and where labor is infinitely more expensive. The possible area for wheat production is

that the average pay of a farm laborer is 5 silver rupees a month, or, at the present depreciated value of silver, about 2 or 3 cents more than \$2. Out of this sum the farm laborer supports himself and family, and on places where a large number of hands are employed the food supply is frequently purchased from the employer, who lessens the cost of his laborers by the profit obtained upon the rice they consume. You can easily see, therefore, that if wheat-growing becomes general there, Caucasian races can ill afford to compete in the market with a product that is so cheaply raised. Unquestionably Great Britain could obtain all her wheat supply from India and very possibly will do so before many years are past.

A TEXAS MILL.

ROLLER mill builders have received little encouragement from millers in Texas, and other sections of the Southwest. The wave of improvement over old methods of milling has not swept that territory with any degree of force compared to the swell that has cleared away the rubbish from the mills in other sections of the country. But the "New South" presents new and inviting fields for the investment of capital, and among these new and fertile opportunities the manufacture of flour and the cultivation of the cereals are not the least promising. The garden spot where this new order of things has taken root, and already flourishes is the vast empire of Texas. Capital is pouring into her boundaries and much of it is being applied to other purposes than to the chief industries of cattle raising and cotton growing. This diversion of wealth is toward cultivating millions of acres of wheat and corn and the erection of mills to manufacture for other markets, as well as in anticipation of the increasing local demand which the vast immigration thither will require. These things are attracting the attention and energy of our mill furnishers. On this page we present a handsome view of the pioneer all roller mill of Texas now under way at Brownwood. The enterprise is controlled by a stock company organized from among leading citizens of Brown county and officered by President, Dr. Johnson; Secretary Jenkins, and Treasurer Mace. The mill is under the charge of J. D. Kinnebrew, as Superintendent, who comes from a family of millers.

The company started out with the intention of getting the very best mill that money could buy, and although they could have built the mill for less money, they solicited bids only from such firms as had the highest reputation. After receiving the proposals of these firms, the whole contract was awarded to Nurdyke & Marmon Co., of Indianapolis, because their guarantees were considered satisfactory, and their price reasonable. The mill has been under construction since April. The building is entirely of stone, and floors of solid construction. The building and ground alone cost over \$8,000. The basement contains the main driving belts and heavy shafting. The first floor contains 14 pairs of steel rolls and the necessary flour packers and scales. The second floor contains a 12-reel bolting chest, elevators, three middlings purifiers and centrifugal flour finishers. The third floor contains a 10 reel scalping bolt chest, three more middlings purifiers, wheat cleaning machinery and storage bins while the texas or cupola contains the elevator heads, a multitude of spouts and other machinery. The wheat is received from wagons and after being weighed, is elevated to the top of the mill. It then descends through various wheat cleaners, one to take out straws, dirt, seeds, cockle, and other impurities; one to scour off smut, crease dirt and the fuzz on the end of the berry and one to polish the coating of the grain and remove the fine dust. The clean grain then passes through various rolls and is gradually reduced from wheat to middlings. These middlings are then purified graded into different sizes and gradually reduced to flour, resulting in an unusually white and strong flour. This process has for its purpose, the elimination of impurities at each step, so there is no dirt in the product when it is ready to be reduced to flour. It is a model mill in all respects, and will no doubt lead the way to improvements of like character in every quarter of that great state.

VIEWS ON GENERAL BUSINESS.

I was sitting in the shade, smoking a mild cigar, the other morning, when the Major

came over with Bradshaw's paper. I must say I like Bradshaw. Although I am the only rival he has in the gulch, he don't show that feeling of distrust so frequently engendered by competition in trade; and there is another thing I must say in his favor, he never imitates me or copies my peculiar system of doing business.

"Asa," says the Major, fanning himself with his palm leaf hat, "here is another young mercantile sprig gone wrong;" and he read an account of a young fellow who, after robbing his employer, attempted to fill the policeman full of lead who tried to run him in.



NEW ROLLER MILL AT BROWNWOOD, TEXAS.

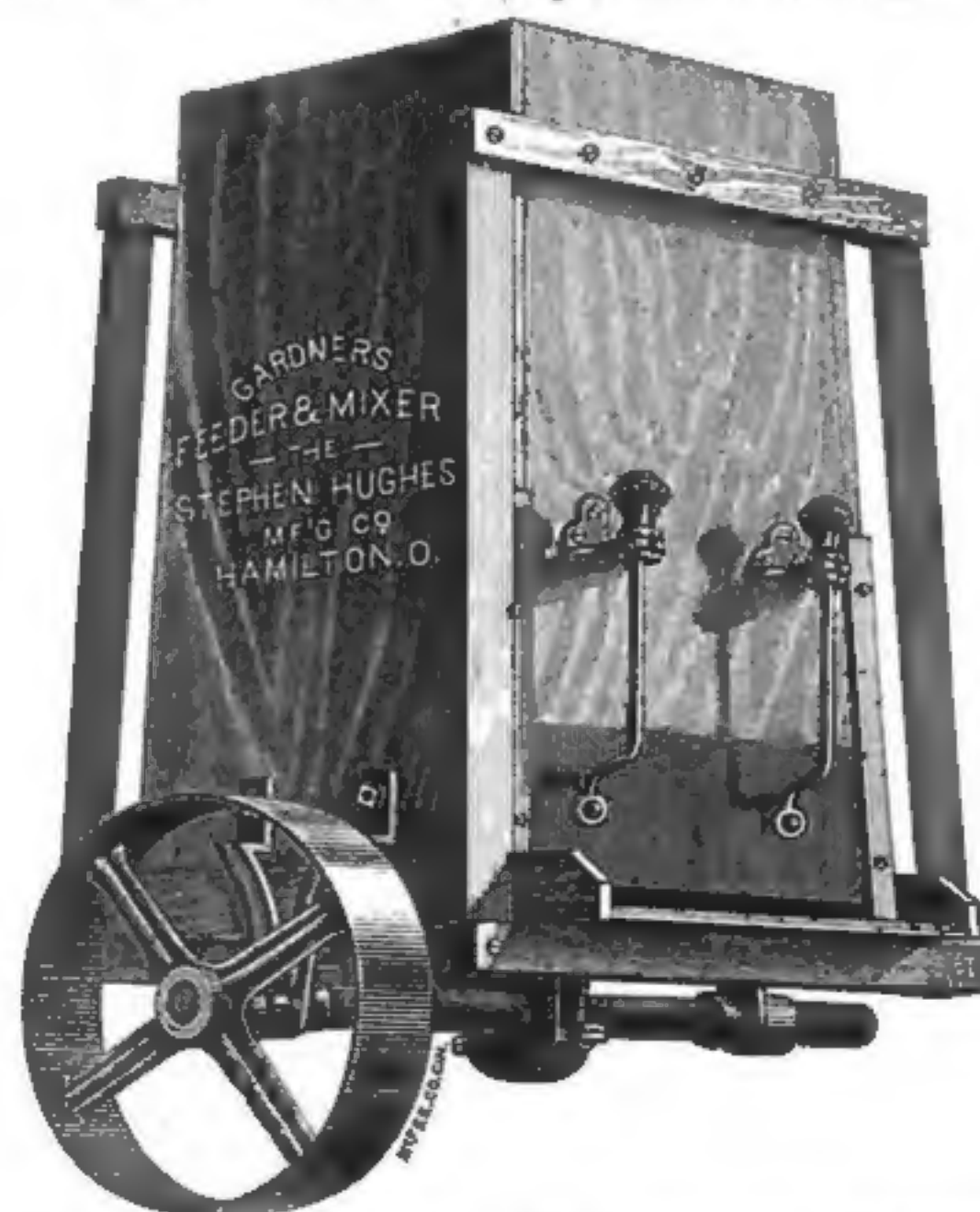
"Major," I says, "there is a heap too much of this sort of thing going on right along among young fellows who have had a good show in life. Now, Major, under such circumstances I can't see what excuse there is for a young man's disgracing himself and his family by becoming a common thief."

"Asa," he replied, "as I put it up, the true in'ardness of this business is, that the average clerk don't get pay enough to enable him to keep up his end with them millionaires' sons he tries to associate with. Society, Asa, as they calls it, has a heap to do in shapin' a young man's career. I hain't

that's the thing as corrals the crumpets every time. Far be it from me to douse the glim which has lighted so many aspirin' youths to fortin', but I don't take no stock in that sort of ambition which leads young chaps to be ashamed of their business, and to crawl under the social canvass when they can't put up the gate money. No, sir; if you want to see the show you've got to pungle up your own tin and not some one else's. A young feller on small wages should keep within his means. By Jove, Asa, no man is so poor as the chap who contracts bills that he can't meet in order to make a show. The poorest beggar of a tramp has a jollier

life than them society dudes as sails under false colors."

"By thunder, Major," I cried, grasping his hand, "whenever you buckle on to a subject, you strap it up in so compact a parcel that any small boy can tote it. Now, my idea always was, that all the young fellows that got into the mud were brought there by evil associates, mis-spent evenings, pin pool, stud-horse poker, and other sinful games, but I am convinced by what you say that when a chap gets a craving for high-toned society, without the money to back it, he is mighty apt, after a while, to be hunting bail with no



GARDNER'S EUREKA FEEDER AND MIXER.

made up my mind yit which is the wust, the lower levels or the croppins; but, by gum, Asa, my boy, I may be wrong, but if my son Aleck was gittin' a small salary in a store in 'Frisco, I'd as lieves find him playing peenuckle in a Dutch beer saloon, as to see him tryin' to spread himself in a drawin' room on Nob Hill; because why, if his head is any ways level the chances are that he will mighty soon sour on his bar-room mates, while if he associates with them society swells his pile is sized straight off, and if he tries to keep up the racket he's bound to go wrong."

"But, Major," don't you appreciate ambition. Give me the young man who aims to shine—"

"Pull up, Uncle Asa," says he; "I don't say nothin' agin ambition of the right sort;

takers.—An "Old Foggy," in Grocer and Country Merchant.

GARDNER'S EUREKA FEEDER AND MIXER.

The Stephen Hughes Manufacturing Co., of Hamilton, Ohio, are probably as well-known to the milling fraternity of the United States as any firm in the mill-furnishing business, and their reputation has been gained by, and now rests upon, the entire reliability of the machinery they offer the public. Conservative, in that they do not place anything upon the market until its efficiency has been demonstrated beyond the possibility of question, it is but natural that when they announce an improvement or a new device that a widespread interest to ascertain what it is and what it will do

should be manifested. The latest addition to their line of manufactures is the Gardner "Eureka" feeder and mixer, an illustration of which we present herewith. As the *American Miller* remarks, the utility of an effective device for feeding and mixing flour, middlings, etc., will be acknowledged by every practical miller. In fact, we doubt whether there are many millers who have not at one time or another rigged up some sort of a device to serve as a feeder, and too often, we imagine, been at considerable trouble and expense, only to find themselves in possession of a rather indifferent device at last.

Every mill has its choking spells; and there is always more or less material that goes into the sweepings that could be saved by a feeder feeding it slowly. Most large mills need the labor of a man or boy to attend to feeding in "chokes" with a scoop, all of which labor could be saved by an automatic feeder under perfect control. Then, too, on starting up the mill on Monday, or after any period of rest, the flour is always "a little off," and more or less time is required to bring it up to grade. With a feeder such as the Gardner Eureka, the off-color flour can be packed out until the flour comes up to grade, and then the off-color flour can be dumped into the feeder, and if properly fed will come out in proper shape. So the stuff in purifier pockets can be handled with this feeder and fed into the low grade reel. Millers of a speculative turn of mind often buy flour that has not been properly bolted, and by rehandling it make a snug sum. Such flour is generally obtainable on the market at a low price, and the only trouble in re-handling it is the trouble of feeding it or mixing it. A machine like "Gardner's Eureka feeder and mixer" can feed and mix flour of this kind, either feeding it into the chop to be bolted, or spouting it directly into the flour going to the packer. Our illustration gives the reader a good idea of the machine, which is very simple in principle, and without any complication of plan. We are assured that it overcomes all the difficulties usually met with in feeding and mixing flour and similar material, and can be regulated to feed from the smallest quantity desired up to five barrels per hour, either into or from any machine, to suit the convenience of the miller. The space it occupies is small, the dimensions of the machine being 2 feet 9 inches, 2 feet, and 1 foot 8 inches. It is very light, and its extreme simplicity renders it almost impossible for it to get out of order. Nor can the feed hang in it, as the hopper is made tapering, largest at the bottom, as shown in the cut. The shaft is carried through so that it can be driven from either side. The speed at which it should be driven is from 20 to 30 revolutions per minute; but it can be run faster if necessary. The size of the pulley is 8 inches. The machine is easily adjusted, and only needs to be bolted in its proper place and the belt attached, to be in running order. The makers of this machine will be pleased to give the reader prices on application.

It has often been said, says *Wall Street News*, that capital is easily frightened. The case was exemplified the other day when a man was about to put \$20,000 into hogs. His son came with the announcement that a St. Louis cooper-shop had busted.

"Ah! cooper-shop, eh? Coopers make barrels, and barrels and pork go together. I think I'll wait a little."

"But that was a cooper-shop which made only flour barrels!"

"Yes, that may be, and while I can't exactly see what flour barrels and hogs have to do with each other, I'll hold this matter open for a few days. There's a drop in the price of bristles in there somewhere, anyhow."

BREAD MAKING..

II.

The practical importance of the fermentation is strikingly shown by the fact that, in the course of sponge-rising, dough-rising, and baking, the loaf becomes about four times as large as the original mixture of flour, water, etc., of which it is made; or otherwise stated, an ordinary loaf is made up of one part of solid bread to about three parts of air bubbles or pores. One of the baker's technical tests of quality is the manner in which the loaves of a batch separate from each other. That they should break evenly and present a somewhat silky rather than lumpy fracture, is a matter of trade estimation. When the fracture is rough and lumpy, one loaf pulling away some of the just belongings of its neighbor, the feelings of the orthodox baker are wounded. The alum is said to prevent this impropriety, while an excess of salt aggravates it. Alum is ordinarily used in the proportion of two ounces to each sack of flour of 280 pounds. The rationale of the action of such small quantity of alum is still a chemical puzzle. That it has an appreciable effect in improving the appearance of the bread is unquestionable, and it may actually improve the quality of bread made from inferior flour.

It appears to be a fact that this small quantity of alum whitens the bread. In this, as in so many other cases of adulteration there are two guilty parties; the buyer who demands impossible or unnatural appearances, and the manufacturer who supplies the foolish demand. The judging of bread by its whiteness is a mistake which has led to much mischief, against which the recent agitation for "whole meal" is an extreme reaction.

If the husk, which is demanded by the whole meal agitators, were as digestible as the inner flour, they would unquestionably be right, but it is easy to show that it is not, and that in some cases the passage of the undigested particles may produce mischievous irritation in the intestinal canal. A middle course would be the right one, viz., that bread should be made of moderately dressed, or "seconds" flour rather than overdressed "firsts" or undressed "thirds," *i. e.*, unsifted whole meal flour.

Such seconds flour does not fairly produce white bread, and consumers are unwise in demanding whiteness. Liebig asserts that in certain cases the use of lime water improves the quality of the bread. Tomlinson says that in times of bad harvests, when the wheat is damaged, the flour may be considerably improved, without any injurious results whatever, by the addition of from 20 to 40 grains of carbonate of magnesia to every pound of flour. Chalk has been used for the same purpose; all would act in a manner by neutralizing any acid that might already exist or be generated in the course of fermentation.

When gluten is kept in a moist state, it slowly loses its soft, elastic and insoluble condition; if kept in water for a few days, it gradually runs down into a turbid, slimy solution, which does not form dough when mixed with starch. The gluten of imperfectly ripened wheat, or of flour or wheat that has been badly kept in the midst of humid surroundings, appears to have fallen partially into this condition. Liebig's experiments show that flour in which the gluten has undergone this partial change may have its original qualities restored by mixing one hundred parts of flour with twenty-six or twenty-seven parts of saturated lime water and a sufficiency of ordinary water to work it into a dough. The action of the alum may be of a similar kind, though it does not satisfactorily explain the bleaching.

The ancient method of effecting fermentation of bread, and which is still employed to some extent in France, differs somewhat from the ordinary modern practice. When

flour made into dough is kept for sometime moderately warm, it undergoes spontaneous fermentation, formerly described as "panary fermentation," and supposed to be of a different nature from the fermentation which produces yeast.

Dough in this condition is called leaven, and when kneaded with fresh flour and water its fermentation is communicated to the whole lump, hence the name. In practice the leaven was obtained by setting aside some of the dough of a previous bath, and adding this when its fermentation reached its maximum activity. One reason why the modern method has superseded this appears to be that the leaven is liable to proceed onward beyond the first stage of fermentation, or that of producing alcohol, and run into the acetous, or vinegar-forming fermentation, producing sour bread.

Dr. Darglish's method, patented in 1856, 1857 and 1858 is based on the fact that water under pressure absorbs and holds in solution a large quantity of carbonic acid gas, which escapes when the pressure is diminished, as in uncorking soda water. Dr. Darglish places the flour in a strong, air-tight, iron vessel, than forces water saturated with carbonic acid under high pressure into this; kneading knives mix the dough by their rotation. When the mixture is completed, a trap at the lower part of the globular iron tank is opened. The pressure of the confined carbonic acid above forces the dough through this in a cylindrical jet or flat ribbon as required and, this again is fashioned by suitable cutters into loaves. The compressed gas expands, and the loaves are smartly baked before the expansive energy of the gas is exhausted.

The difference between new and stale bread is familiar enough, but the nature of the difference is by no means so commonly understood. It is generally supposed to be the result of drying. That this is not a true explanation may be easily proved by repeating the following experiment: Place a stale, six days old, loaf in an oven for an hour, during which time it will, of course, be further dried; but nevertheless it comes out a new loaf. During the six days the bread lost one per cent. of its weight by drying, but during the one hour in the oven it lost three and a half per cent. in becoming new and apparently more moist. By using an air-tight case instead of an ordinary oven the same piece of bread can be made alternately stale and new several times.

The crumb of bread, whether stale or new, contains about forty-five per cent. of water; and I am now making a few experiments which promise to afford an explanation of the changes induced in stale bread by heating, and will communicate the results as soon as the experiments are concluded satisfactorily.

A HOPELESS CASE.

"What's the matter, old fellow? You look sick."
"I am."
"Business dull?"
"No."
"Health bad?"
"Yes. Dyspepsia."
"That's too bad. Your cooking is not very good, is it?"
"No."
"Wife gone away?"
"No. Girl has."—*Texas Siftings.*

A FEARLESS WIDOW.

A New York widow was taking the fresh air in Central Park with her two children when she met a former lover, with whom she entered into conversation.
"I am completely broken down, Amelia," he said, seizing her hand. "There is no telling what I might not say and do if it were not for these children."
"Children," said the fond mother, pushing

them away, "run over yonder where the goat carriages are and play until I send for you."
—*Texas Siftings.*



BOLTING CLOTH.

Do not order your cloth until you have conferred with us. It will pay you, both in point of quality and price. We are prepared with special facilities for this work. Write us before you order.

CASE MANUFACTURING CO.,
Columbus, Ohio.

Office and Factory, 5th Street, north of Naughten.

BUCKWHEAT FLOUR

Always commands a better price, and gives better satisfaction to the consumer when made by the aid of Craisons' Silver Creek Roller Buckwheat Shucker. This is a fact which we can demonstrate to any miller who will write us.

G. S. CRANSON & SON.
Silver Creek, N. Y.

MILL COGS AND CONVEYOR FLIGHTS.

Cogs to order on shortest possible notice, large stock of superior flights on hand.
N. P. BOWSHER.
South Bend, Ind.

FOR SALE!!

Nine full set of the celebrated Stevens rolls, made by the John T. Noye Mfg. Co., Buffalo, N. Y. Six of them were sent to the Commercial Mills, Detroit, Mich., in December last, but were taken from there without having been put in operation, or having been touched by fire, and our rolls substituted. They were made from the present patterns of the John T. Noye Mfg. Co., and have their late so-called Holt belt drive (or words to that effect). We will furnish smooth rolls with these machines, or any kind of corrugations, to parties who may object to the Stevens corrugations. Three set we have recently taken from the celebrated Elkhorn Mills, of H. D. Rush & Co., Leavenworth, Kan., where our rolls are being placed. All of these rolls were made at Ansonia, Conn., and are of the same make as those used by the John T. Noye Mfg. Co. We offer these rolls at half list price. Please write for particulars. Respectfully,
NORDYKE & MARION CO.,
Indianapolis, Ind.

EZEKIEL & BERNHEIM, Auctioneers,
124 MAIN AND 81 HAMMOND STS., CINCINNATI.

ADMINISTRATOR'S SALE

Of the Hungarian Roller Process

WHITE STAR FLOUR MILLS

Property and Machinery,
NOS. 28 AND 30 WEBSTER STREET,
CINCINNATI, OHIO.

At Auction, by Order of Court, on account of the Death of the Owner,

THURSDAY AFTERNOON, SEPT. 11, '84,

COMMENCING AT 3 O'CLOCK, UPON THE PREMISES.

Appraised at \$47,000.

TERMS OF SALE One-Third Cash on Day of Sale, balance in one and two years, with interest, secured by Mortgage on Premises.

EDWARD H. HUNTINGTON,
FRANK HUNTINGTON,
Administrators of the estate of H. D. Huntington, deceased.
J. H. BATES, Attorney.

EZEKIEL & BERNHEIM, Auctioneers.

For Particulars see page 302.

SITUATIONS WANTED.

Advertisements under this head, 25 cents each insertion for 25 words, and 1 1/2 cents for each additional word. Cash with order. Three consecutive insertions will be given for the price of two.

SITUATION WANTED.

By a miller who understands the "Roller System." Good references. Address, LOCK BOX 84, Niagara Falls, N. Y. 1880

WANTED.

A situation in a mill, by a man with a small family, who has been running burr mills for a number of years. Address, WM. H. WOLLERTON, McElhattan P. O., Clinton county, Pa. 8191

SPECIAL ADVERTISEMENTS.

Advertisements of Mills for Sale or Rent, Partners Wanted, Machines for Sale or Exchange, etc., etc., cost 1 1/2 cents per word for one insertion, or 4 cents per word for four insertions. No order taken for less than 50 cents for one insertion, or \$1 for four insertions. Cash must accompany the order. When replies are ordered sent care of this office, 10 cents must be added to pay postage.

FLOUR MILL FOR SALE CHEAP.

On easy terms of payment; favorably located, within 50 miles of this city, good opening. Address, P. O. Box 2418, St. Paul, Minn. 1638

FOR SALE.

A good water power flour and saw mill, doing a good business. Situated in Western Ohio. Will sell at half value. Address, LOCK BOX 17, Troy, Ohio. 1922

FOR SALE OR RENT.

A three-run tide-water mill, all in good order; good machinery. A bargain for a man with a small capital. Water all the year. C. E. STUDWELL, Bay Port, Conn. 1821

WANTED TO RENT.

A custom mill. Must be in good order, with trade established. New York or Pennsylvania preferred. Address, with full description, I. W. POST, Phelps, Ontario county, N. Y. 1821

WANTED.

A practical mill man for a partner, or will sell a first-class merchant mill, with cotton gin attached. Finest location in America. Address, JOHN ESTES, Abilene, Taylor county, Texas. 1821

FOR SALE OR RENT.

Good water power custom mill in good wheat section, doing good business. Well located for custom and merchant work, with house, barn, and shed. J. D. REEVES, Newark, Wayne county, N. Y. 1922

A BARGAIN.

One 16-inch under-runner, full iron frame, middlings mill, made by C. C. Phillips, Philadelphia. It is brand new, has never been used, and will be sold at a big bargain as I have now no use for it. Address C. 91, care THE MILLING WORLD, Buffalo, N. Y. 1821

YOU CAN BUY THESE CHEAP.

Three McCully Corn Cob Crushers.
The above articles are brand new, in perfect condition, just as they left the factories, and will be sold very cheap for cash. Address S. 80, care THE MILLING WORLD, Buffalo, N. Y. 1821

FOR SALE CHEAP.

One 6-horse power engine and 10-horse power boiler, all complete, price, \$350; one 8-horse power engine and 10-horse power boiler, price, \$375; one 10-horse power portable complete, price, \$350; one 10-horse power Russell Traction, price, \$500; one 4-horse power vertical engine, price, \$120. Call or address for particulars ETRA F. LANDIS, Lancaster, Pa. 2622

MILL FOR SALE.

Building 48x150, four stories; four run burrs; one set Allis rolls; latest improved cleaning machinery; double engine, 40-horse power each; capacity 120 barrels. Located on railroad switch. Good shipping facilities. Built in 1879, and in first-class order, doing a good custom and local trade. Will sell at a bargain. For particulars address, MERCHANT MILLS, Brownstown, Fayette county, Ill. 1922

FOR SALE.

A four-run New Process water power flouring mill, and 160 acres of very choice land; 40 acres of young timber. Situated in Colfax county, Neb. Mill in good repair. A never-failing water power. All facilities for making first class flour. A good chance to do a first-class paying business. Owners desire to go into other business. This property will be sold at half its cost. Address, J. A. GRIMISON, Schuyler, Colfax county, Neb. 1714

A GENUINE BARGAIN.

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Correspondents must give their full name and address, not necessarily for publication, but as a guarantee of good faith.

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IS WHEAT TOO CHEAP?

A WELL-KNOWN operator on the Board of Trade at Chicago, has undertaken to bull wheat values, and firmly gives expression to his opinion that this commodity is now selling at prices much below its intrinsic worth. Without stating specifically what causes will operate to advance prices he intimates that the Keene and other corners taught foreign buyers to pursue a hand-to-mouth policy. They found that to lay in heavy supplies according to their old way was unnecessary; that with electric cables and steam transportation wheat in the elevator at Chicago was as much at their command as if they held it in the warehouses at home. Hence, American capital must carry the American surplus. The invention of the twine-binder made wheat-growing possible on a larger scale and cheapened its production possibly as much as five cents a bushel. Then, the costs that intervene in the transfer of the wheat between the producer and the consumer are so great that the tendency to leave it in the hands of the farmer until it is wanted is constantly increasing. These costs are summed up in his circular as follows: The railroads charge on an average 30 cents per bushel to carry wheat from the producer to the seaboard, the elevators charge 15 cents per bushel, the insurance companies two cents, and the bankers six cents per bushel—in all 53 cents for holding grain over one crop.

On Friday last No. 2 Red winter wheat sold in Chicago for 82½¢ a bushel, closing at the former figure. No. 2 Spring sold at 78½¢ to 79¢ closing at 79½¢. That the opinion of the gentleman alluded to is not generally concurred in by the operators on change at Chicago is pretty well evidenced by the fact that September wheat was in light request and sold at 78¼¢ a bushel, and closed at 79½¢. October was in good de-

mand and sold at 80½¢ a bushel, and closed at 81½¢ a bushel. November was quiet and sold at 82½¢ a bushel, and closed at 83½¢ a bushel. December quiet and sold at 83½¢ a bushel, and closed at 84½¢ a bushel. May sold sparingly at 90¢.

But the world it is argued is always within less than one year of starvation, and within less than two or three years of being naked. "The surplus which we had on hand this year on the eve of sending our reapers into the harvest-fields was not enough to feed the people of this country four months, to say nothing about seed for the next crop or the supply of the needs of St. Giles and the Quartier Latin. Fat years are succeeded by lean years. It may be that the opening of new wheat areas, the concentration of the surplus of all the wheat on every point of demand, the cheapening by inventions of the cost of production, and—a cause that is not to be slighted—the steady effect of speculation enlarged by the world-wide facilities offered by the exchanges—may, all taken together, reduce the average quotation of wheat a few cents a bushel permanently. That average quotation in Chicago for twenty-four years has been, in specie, 97 cents a bushel. They may have to be reduced to an average of 90 cents. But present values are not normal. They represent the panic of sellers, real and speculative. The bent bow will surely spring back. Looking ahead, by generations, we can see that with the westward wheat line of this country pushed up against the sand beaches of the Pacific Ocean, and with the wheat growing soft on the older farms, it is impossible that there should be too much wheat." Thus saith the *Chicago Tribune*.

William M. Grosvenor, the well-known statistician of New York, figures out that the surplus remaining in this country July 1 was 75,554,195 bushels as against 65,877,155 remaining on hand a year previously. "Present indications," he declares, "are that the abundant supplies on both sides of the ocean will cause very low prices this fall." In his opinion the "obvious cause of the unnaturally low prices of wheat all over the world is the extraordinary increase in railroad and ship building within the last few years. Railroads in India and here have multiplied wheat-growing acres. The cheap ships of these days have brought the most distant acres into competition."

Some weeks ago the Government Agricultural Bureau estimated this year's wheat crop at 485,000,000 bushels, which is 35,000,000 more than a full average crop. But later figures are still more favorable. S. W. Tallmadge of Milwaukee has made up a final estimate, based on the very latest official reports of State agricultural departments and statistical agents in various States and Territories. The estimate based on these reports makes the total production of winter wheat 380,000,000 bushels, of spring wheat 150,000,000 bushels, and the total yield (530,000,000 bushels) fully 25,000,000 bushels more than ever before, 130,000,000 more than last year, and 80,000,000 more than the average crop for the past five years. The reports all agree that the quality is superior, and where it has been threshed the yield has more than met expectations. If we admit the accuracy of the estimate of Mr. Tallmadge our wheat supply will exceed 600,000,000 bushels for the crop year ending June 30, 1884. How shall we dispose of it? Certainly not by advancing values, for this would close against us all foreign markets. We think wheat is much too cheap for the general prosperity of the country, but can discover no causes operating to advance values just yet.

We believe the practice of cultivating wheat for exportation to be detrimental to the best interest of the country. In past years it has been attended with some profit, but it has also foisted upon the community a class of

speculators who have at last succeeded in forcing foreign buyers to attempt the development of other sources of supply. The possibility of fixing values upon our surplus, and the surplus alone governs the value of the entire crop, has, perhaps permanently, passed beyond our control, and except a series of unfavorable years should be experienced by importing countries it may be, we think safely, set down that the growing of wheat for export will yield less of profit with each succeeding season. Wheat is too cheap.

WE have harvested a wheat crop exceeding 500,000,000 bushels, and, since the establishment of the Patent Office, up to and including August 26, have issued 304,287 letters patent for inventions. This is a great country; it produces the greatest wheat crops of the world, and surpasses all other nations in the multiplicity and ingenuity of its labor-saving and mechanical devices, yet it has among its people those who howl for governmental protection of its manufacturing interests. In one breath we assert our immense superiority to any and every nation on the footstool, and in the next beg to be protected from competition with the products of foreign "pauper labor." Suppose, and this is a conundrum, two pieces of cloth, one of domestic, the other of foreign manufacture, identical in pattern and texture, are placed side by side upon your tailor's counter. Let the price of the foreign article be but little below that of the American cloth and which piece will be selected by the most pronounced "protectionist" if he happens to be in want of a suit of clothes? The foreign article every time. Apropos of this the *Detroit Free Press* tells a story. "John C. Blanchard of Ionia 'called the turn' a few days ago on the great economic question of the time in this wise: 'Protection? Why of course I'm for protection. Haven't I got 5,000,000 feet of lumber at Sheridan? Isn't there a protective tariff of \$2 a thousand on lumber? Isn't that \$10,000 in my vest pocket?' 'Now there's salt. I've no interest in salt, and I'm ready to have it let in duty free. But lumber! When you begin talk no tariff on that, and I happen to be around, you'd better stand from under.' The fact that our business interests suffer because of an over-production of manufactured articles would seem to afford strong evidence that our manufacturing interests have expanded beyond legitimate requirements, and that instead of requiring governmental protection to "foster" them, they must enter into competition for the patronage of foreign countries. We should keep our wheat at home; make it into flour to be consumed at home, if we have to import humanity to consume it. Suppose the removal of the protective tariff should result in diminishing the mechanics wages—a result by no means immediately probable—every article he consumes would also be lowered in price so that his purchasing ability would not be sensibly diminished. Give our manufacturers untrammelled access to foreign markets and it will result in more continuous employment for our mechanics, better prices for the farmers' products, and activity and prosperity for our millers. The United States should have by this time, outgrown its babyhood, and be able to assert its equality with the other nations of the world.

It is highly desirable that the agriculturist receive fair compensation for his labor, otherwise his purchasing powers will be limited and the effect will permeate every branch of productive industry. It has been asserted, and attempted to be proven that the farmers of the Northwest can produce wheat at a cost of 35 cents per bushel. Perhaps this is true, but we doubt it. If true, then prices current for that commodity would yield them a very handsome profit.

A correspondent of the *Chicago Tribune*, writing from Mason City, Ill., furnishes a statement of the cost of production of forty acres of wheat in that section, "which," he says, "though below the average, is by no means an exception." We copy his statement as interesting at this time. The plot is forty acres of fair quality of land:

Seed wheat, 60 bushels at 85 cents.....	\$51.00
Breaking, harrowing, ploughing and seeding at \$2.25.....	90.00
Harvesting.....	71.80
Threshing.....	44.80
Taxes.....	21.00
Total cost.....	\$278.60
448 bushels wheat at 65 cents.....	291.20

Profit on forty acres..... \$12.60

"This is not a very lucrative showing, especially when we remember that it allows nothing for interest on the value of the land, nor for several other items which a city business man would be apt to drag into the account to cover wear and tear of conscience." From this estimate it would appear that the cost of the wheat in the farmers' bin was a trifle more than 61½ cents per bushel. His net profit, if the wheat could be sold on the farm would be a fraction less than 3½ cents per bushel, or 31½ cents per acre. If we allow that his land is worth \$50.00 per acre then this profit is entirely absorbed by the interest upon the value of the land. If he has to haul his wheat to the railroad he does so without compensation. Taking it altogether this Mason City farmer would have been just as well off to-day had he put no seed on that 40 acres of land.

THE question whether an increase of tariff on breadstuffs is beneficial or injurious, is extensively discussed in Germany at present, and both sides are vainly trying to demonstrate the justice of their own, and injustice of their opponents' views. The people will undoubtedly benefit by such an extensive discussion, and perhaps at the end conclude to dispense with the tariff altogether in spite of all present opposition.

LET'S see: Over-production was supposed to be the prime cause of our business lassitude; next to this was the uncertainty attending crop products; then it was asserted that years when presidents are made exert a depression? The cholera hasn't helped us, nor has the Franco-Chinese war. Something has got to be done, but what is that something?

PRUDENT, shrewd, and sagacious millers, who are possessed of some ready capital and storage facilities might turn an honest penny or two by purchasing wheat at current quotations, to be converted into flour next Spring. Several millers will make a nice thing by doing something of this kind. You watch things and see.

MILLERS' Associations do not seem to vegetate luxuriantly in this country. The reason undoubtedly is that as a people we are too strongly disposed to "go it alone." Each has his own ideas of what will prove beneficial to himself, and is disposed to look with suspicion upon all philanthropic schemes suggested by a competitor.

ATLANTA, Ga., contributes a specimen of typographic work in the form of an illustrated catalogue of A. A. De Loach & Bro., manufacturers of Turbine Water Wheels, and general mill-furnishers, in that city.

WITH an abundance of wheat, of most excellent quality, we should begin to hear of some extraordinary results of close milling in the next few months. Who will start this ball?

SAMUEL CAREY, No. 17 Broadway, New York, has issued a new and unique illustrated catalogue for millers use. Send for a copy of it.

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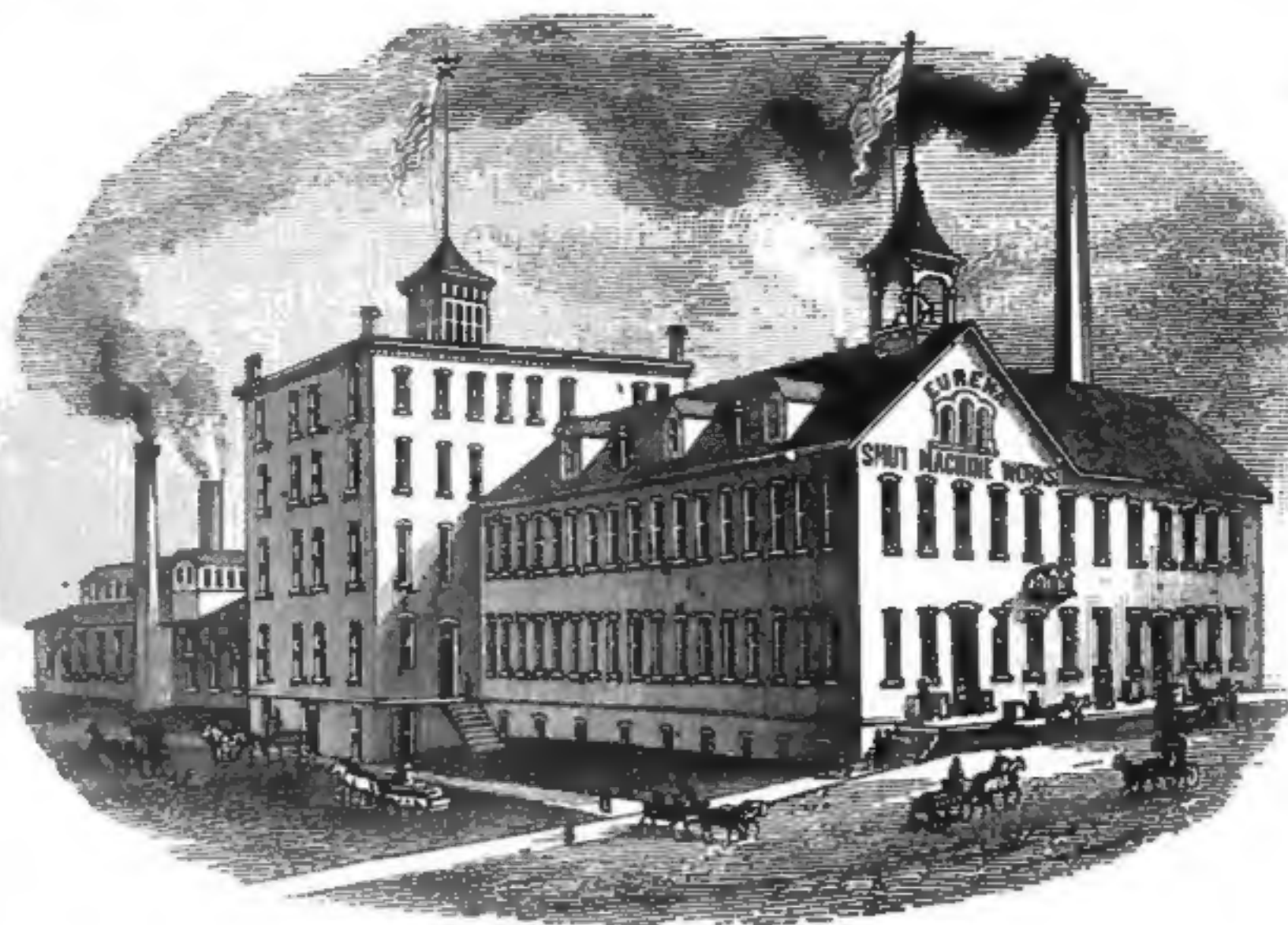
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Silver Creek Flour Packer.

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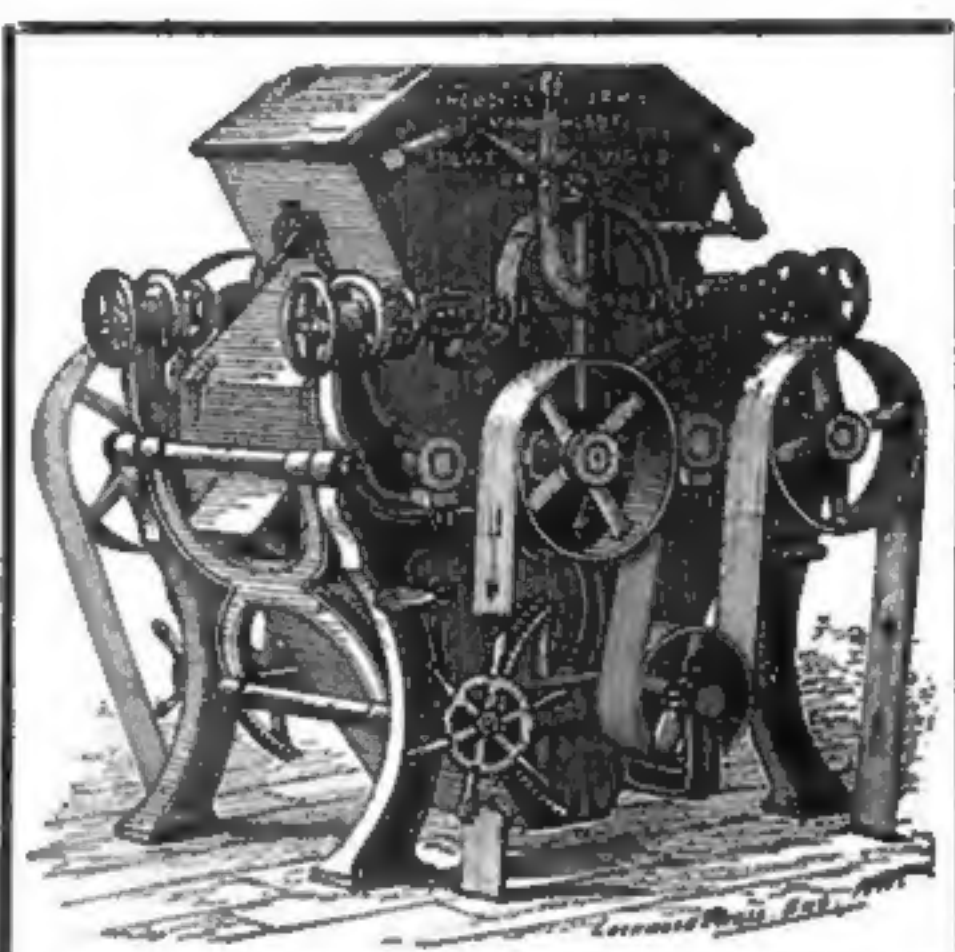
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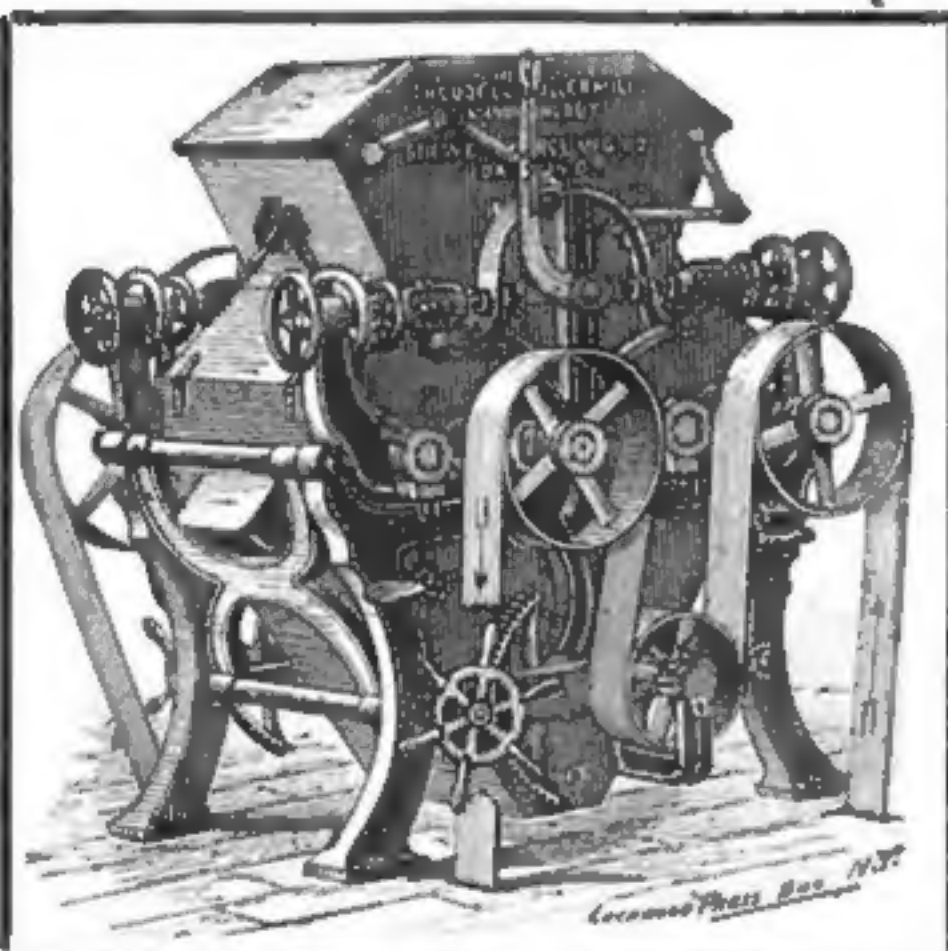
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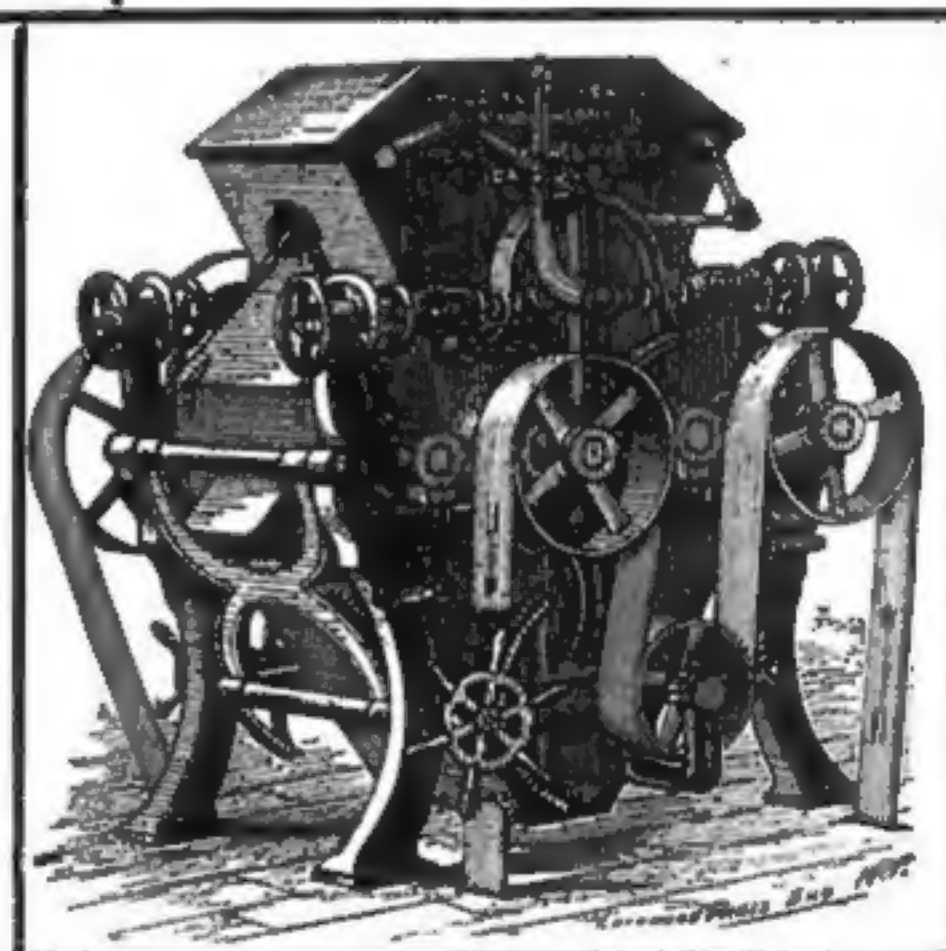
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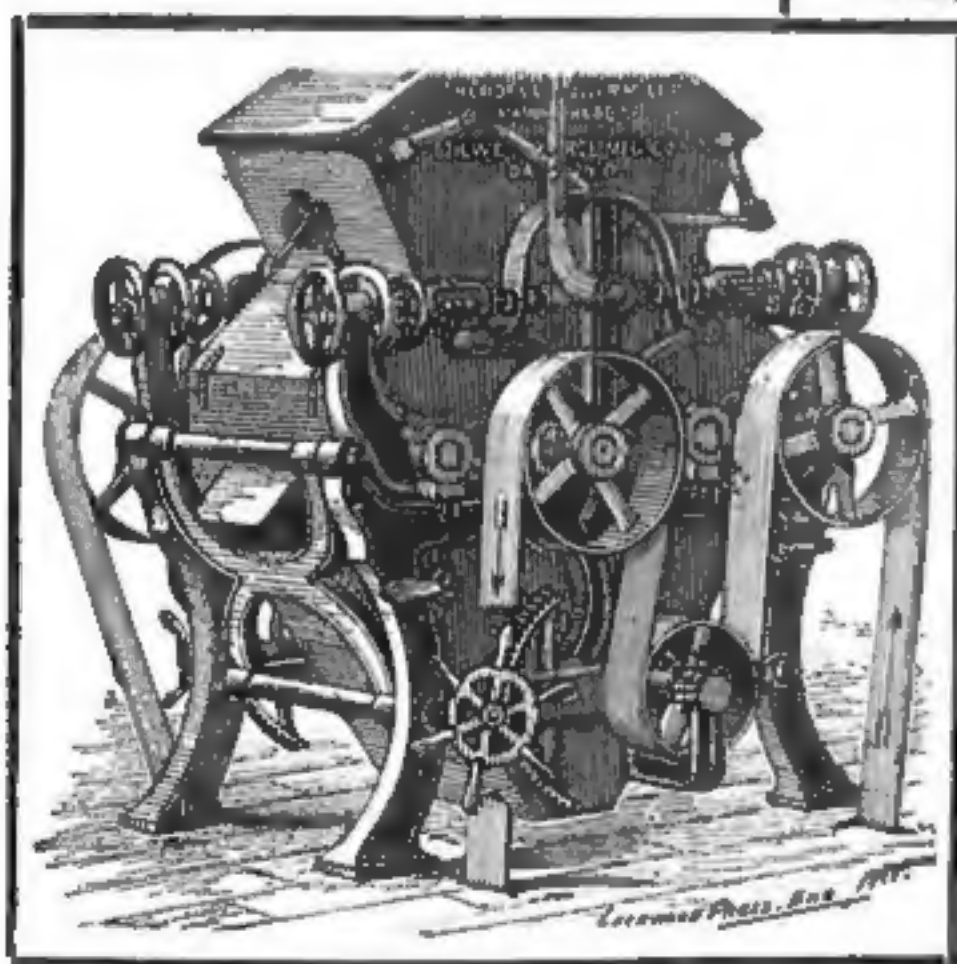
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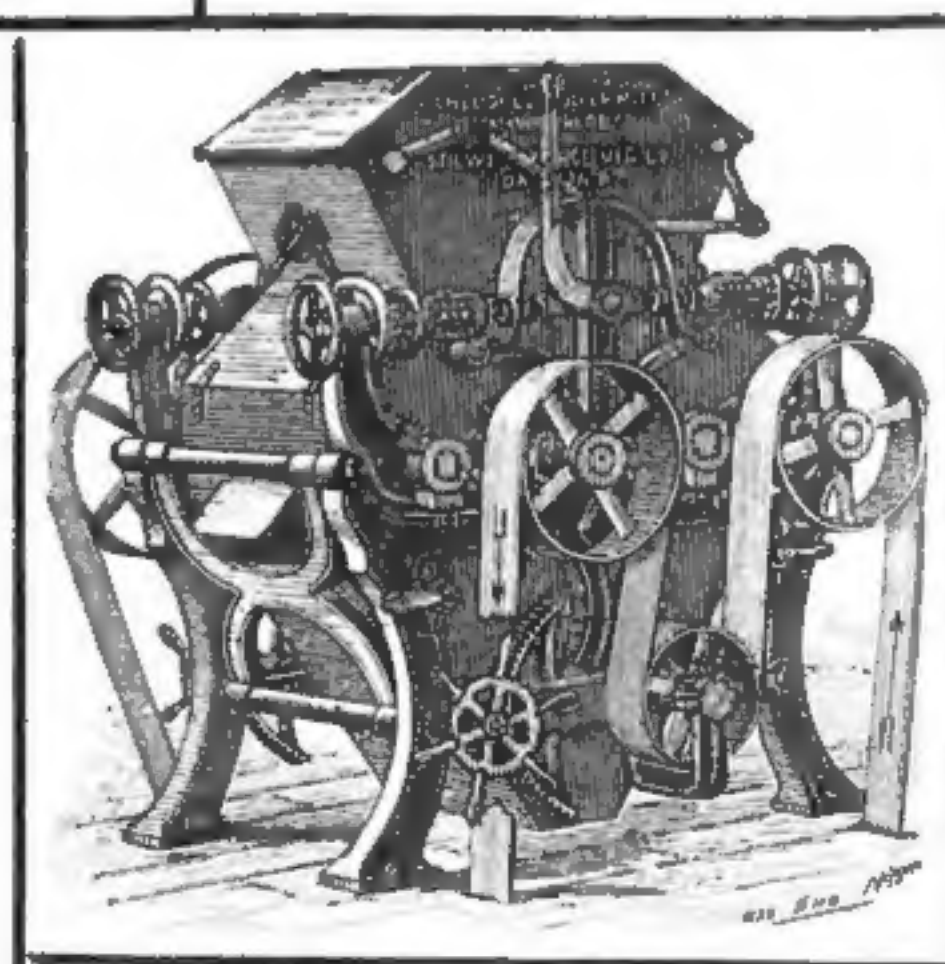


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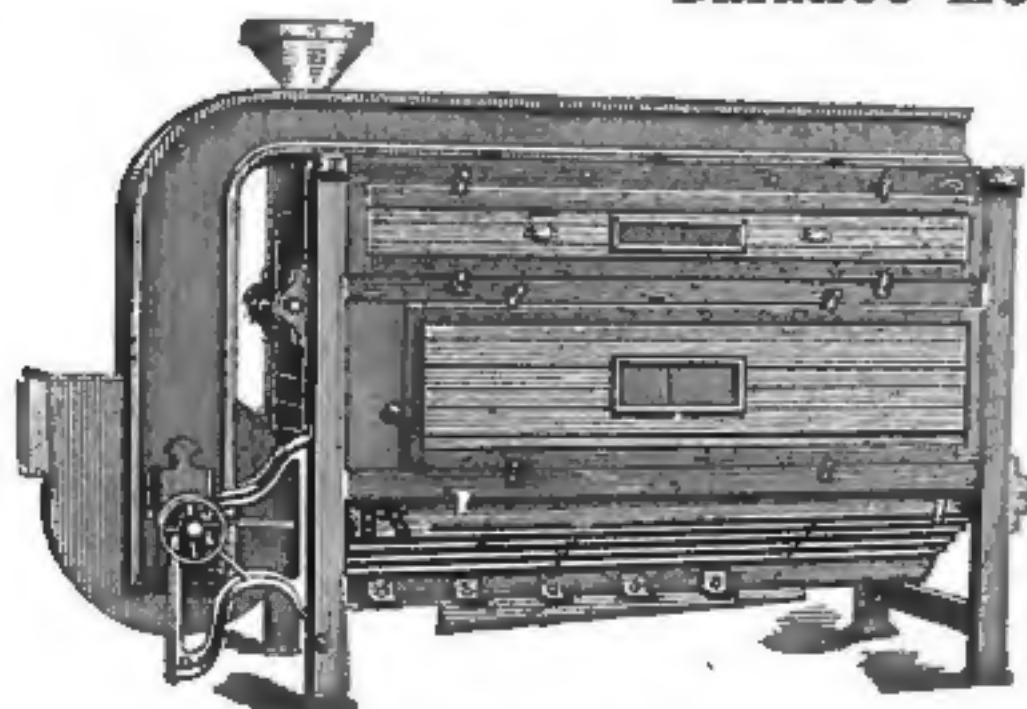
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CUT-OFF FOR BOLTING-CHESTS.

Letters Patent No. 303,763, dated August 19, 1884, to John Todd, of Lewistown, Pennsylvania. The improvements relate to flour-bolting machinery; and the invention consists in the construction and arrangement of the valves located between the flour-reel and the conveyors. Figure 1 is a central vertical section of a bolting-chest, taken through the line *x x* of Fig. 2, to which the improvement has been applied. Fig. 2 represents a top plan view of the same with the flour-reel removed. Fig. 3 is a detailed view of one of the cut-offs or valves. In the drawings, *A* represents a flour-reel of the usual construction. It is hung in bearings and placed over the hopper-boards *B*, which

are end pieces for closing the ends of the valve-box. When it is desired to change the flour products in their delivery from the reel through the hopper to the conveyor, so that the bolt may enter either one of the conveyers *F* or *G*, the cut-off valves *H* are vibrated or shifted for that purpose. In other words, when the flour products are desired to be delivered to the conveyor *F*, the cut-offs *H* are shifted to the right, as shown in full lines in the drawings. When the bolt is intended for the conveyor *G*, the cut-offs are vibrated to the left, as shown in dotted lines. If desired, either one or more of the cut-offs *H* may be shifted independently of the others at any one or more points. The cut-offs *H* are provided with rubber facings *k*, in order to make the cut-offs work closely to the partitions *M* between them, and thus prevent any leakage, thereby making the separation of the products more complete. By the employment of the rubber facings to the opposite sides of the valves or cut-offs, the usual side strips on the adjoining partitions *M* of the valves, which

2 is a plan view of one of the feed-slides or cut-offs, and Fig. 3 is a detailed perspective view. In the drawings, *a* represents the hopper-boards of the bolting chest, which are located beneath the reel. The boards *a* are secured to the pieces *b*, which form the upper walls of the cut-off slides. *c* represents the cut-off slides, each of which is capable of independent operation. *d* are the inclined end walls, arranged as shown, whereby the flour products may be changed from one conveyor to the other by the longitudinal movement of the valve. *e* are the vertical side walls of the valve or cut-off. Each valve has a partition or wall at either side. These partitions are made of thin sheet iron, and the adjacent walls of each valve connect each other. *f* is a saddle-piece, made of sheet iron, and rigidly secured in any suitable way to the hopper boards *a*, and embraces the contiguous partitions *e* between it. This saddle piece projects below the lower end of the hopper-boards, where it acts as an effectual stop to the forward and backward movements of the slides. This construction economises a great deal of space and effectually prevents any leakage of the flour products between the series of valves. *g* are doors for closing the openings made by the introduction of the valves. *h* and *i* are the conveyor-troughs, arranged beneath the cut-offs so that the flour products may be changed from one conveyor to the other at pleasure by the operation of the valves. It will be seen that by the employment of cut-offs having thin sheet-iron sides a great saving in space is obtained; and further, that by the employment of the saddle pieces between the valves a very efficient means is at the same time secured to prevent any leakage of the flour, or any clogging of the valves in their movements.

has brought us to this pinch. We produce too much and too fast."

The other agreed with him, and a farmer-looking man across the aisle spoke up and said: "Gents, that strikes me hard, and I believe you are right; overproduction is the evil, and I know it. I'm the father of thirteen children, and I know your theory is correct—quite correct. Hanged if I can even git shoes enough for the crowd. Count me a convert."

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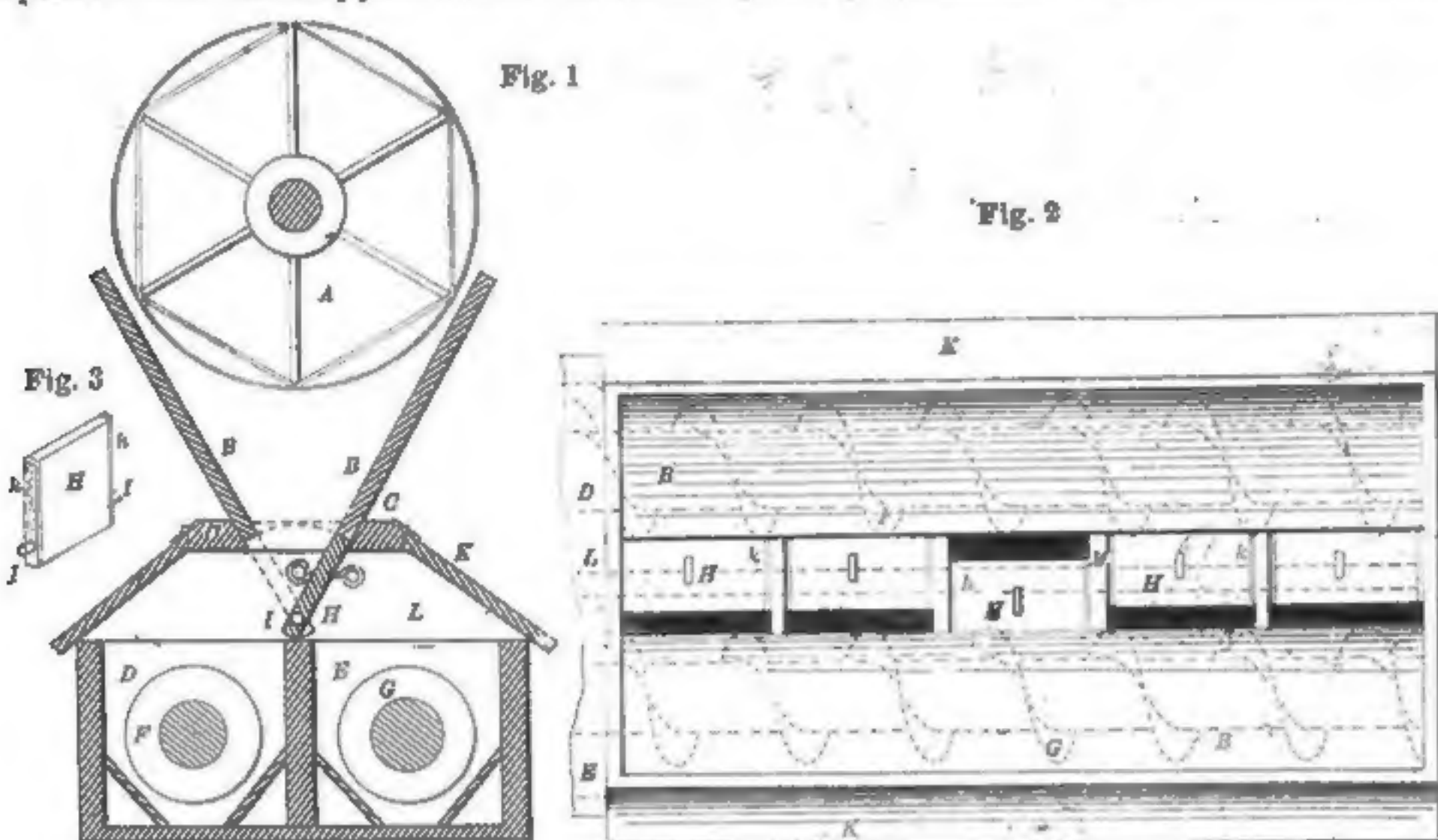


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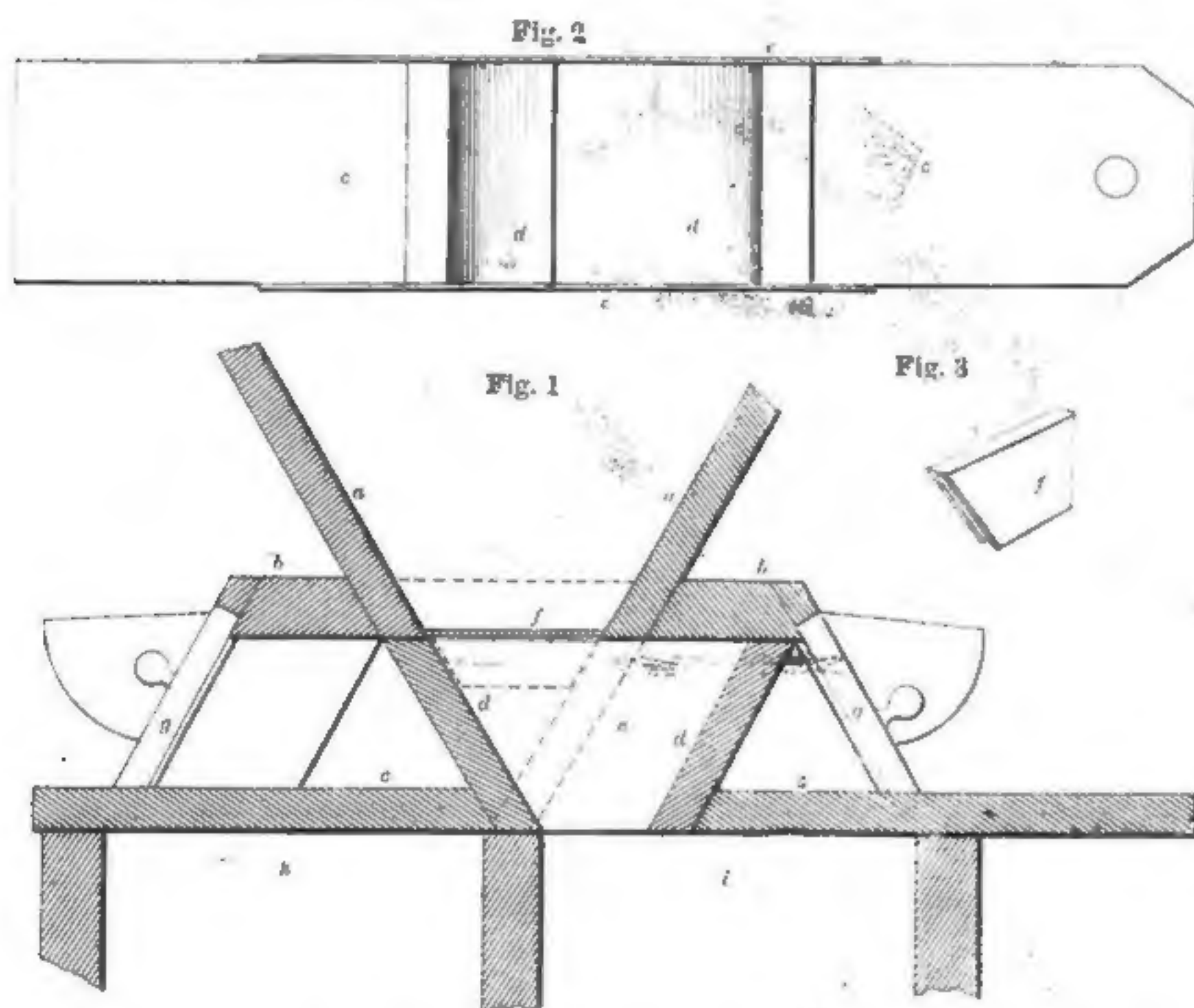
HORACE DEAL, Bucyrus, Ohio

GOING TO STOP.

They were canvassing the present hard times and future prospects, says the Wall Street News, and one of them finally said: "I tell you, sir, it is overproduction that



PATENT NO. 303,763. CUT-OFF FOR BOLTING CHESTS.



PATENT NO. 303,764. CUT-OFF FOR BOLTING CHESTS.

are V-shaped. The hopper-boards are mounted within a bed-plate, *C*. Beneath this bed-plate are arranged two conveyor-troughs, *D E*, containing the conveyers *F* and *G*, which in this case are of the spiral-vane construction, although they may be of any desired and approved form. *H* are a series of valves hinged upon rods *I*, located over and between the two conveyor-troughs or boxes. It will be noticed that the valves or cut-offs *H* form a continuation of the hopper-boards, *B*, and that their pivotal point is in such position that when the cut-offs are vibrated to one side or the other (so as to form a continuation of either one of the hopper-boards, *B*) the lower ends of the cut-off valves will project beyond the partition between the two conveyor-boxes. This arrangement prevents any lodgment or accumulation of the flour products. *K K* are doors hinged to the bed-plate *C*, and which enable the attendant to get access to the cut-off valves, in order to operate them or for the purposes of renewal or repair. *L*

were necessary to prevent any leakage through the valves, may be dispensed with. These side strips, moreover, are objectionable, in that the flour products accumulated upon them and prevented the proper seating of the valves. By providing a cut-off arranged over the two conveyers when arranged side by side, the flour products are easily and conveniently changed in their delivery, from one to the other conveyor at one point, thereby saving the expense and the use of apparatus for receiving the bolt at one end of one conveyor and transferring it back again through the other conveyor.

CUT-OFF FOR BOLTING-CHESTS.

Letters Patent No. 303,764, dated August 19, 1884, to John Todd, of Lewistown, Pa. This invention relates to cut-offs for bolting chests, and the improvement consists in the following construction and arrangement, the points of novelty of which are set forth in the claim. Figure 1 represents a central vertical section showing improvement. Fig.

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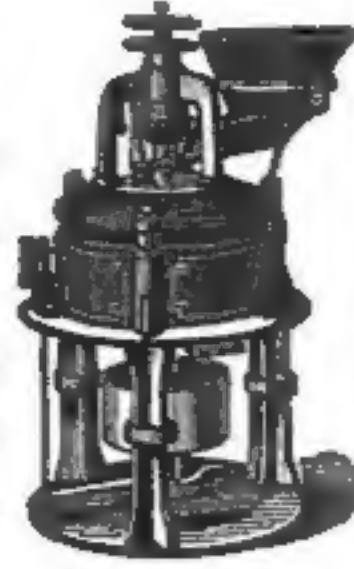
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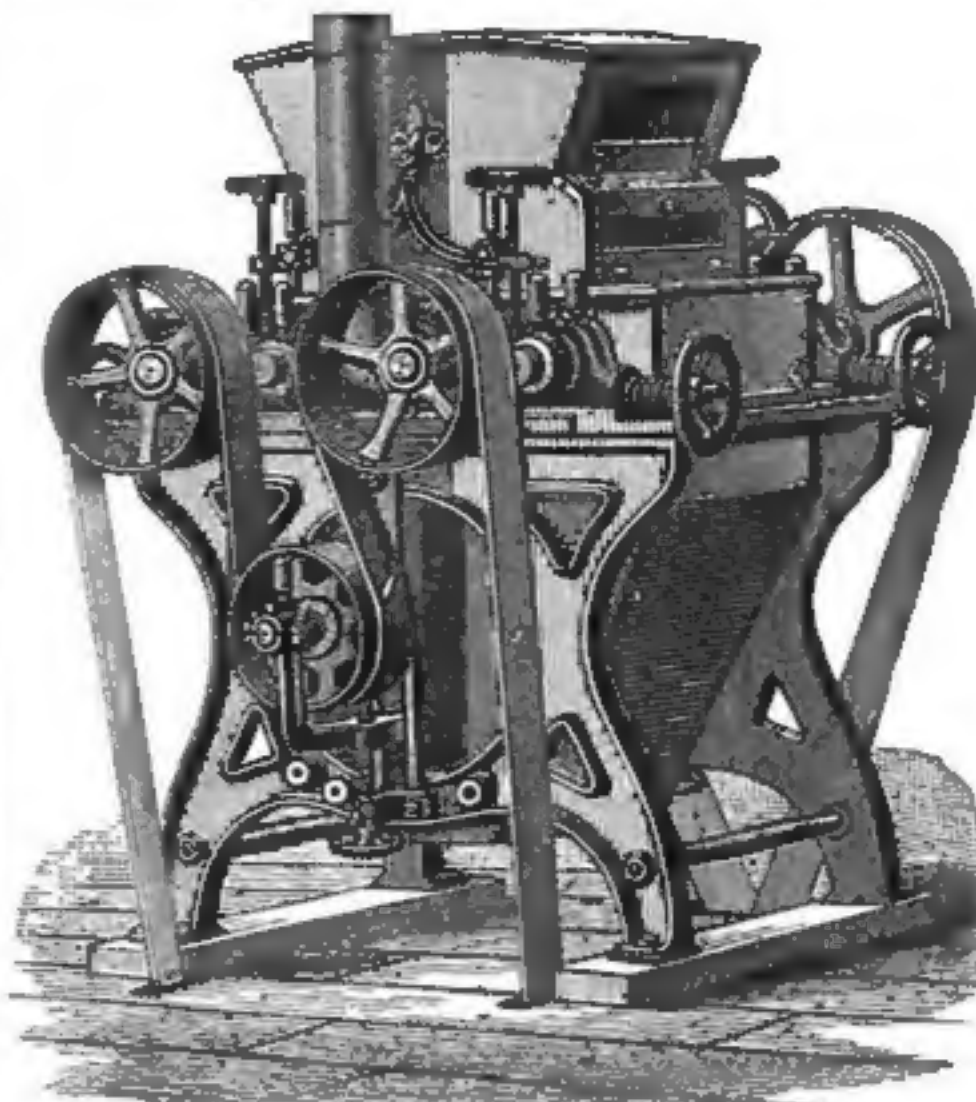
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purchasing any Roller Mill.

O. E. BROWN MFG. CO.,

GRAND RAPIDS, MICHIGAN.

GOVERNORS { For Water } Cohoes Iron Foundry & Mch. Co.
Wheels Send for Catalogue. Cohoes, N. Y.



MUNSON BROS.

MANUFACTURERS OF
Munson's Celebrated Portable Mills,
FOR WHEAT, MIDDINGS, CORN, FEED, Etc.

Millstones, Hangings, Bolting Chests, Shafting,
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DEALERS IN EVERY KIND OF

MILLING MACHINERY,
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Genuine Dufour Bolting Cloth.
Specifications, Estimates and Plans furnished.

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FOR CIRCULARS AND PRICE LISTS ADDRESS
The GEO. T. SMITH MIDDINGS PURIFIER CO.,
JACKSON, MICHIGAN, U. S. A.



MILL SUPPLIES { Everything Used in a Mill of Every Kind Always on Hand.

Leather Cotton Rubber } **BELTING, BOLTING CLOTH**

ELEVATOR BUCKETS, BOLTS, MILL IRONS, &C.

Prices Close and Quality the Best.

The Case Mfg. Co., Columbus, Ohio.

ROLLS RE-GROUND

And Re-corrugated to order. Porcelain rolls
re-dressed. Our Machinery for this purpose
is very accurate. Can do work promptly.

Case Mfg. Co., Columbus, Ohio.



THE BOWSHER OVERLAPPING SPLIT-WOOD PULLEY.

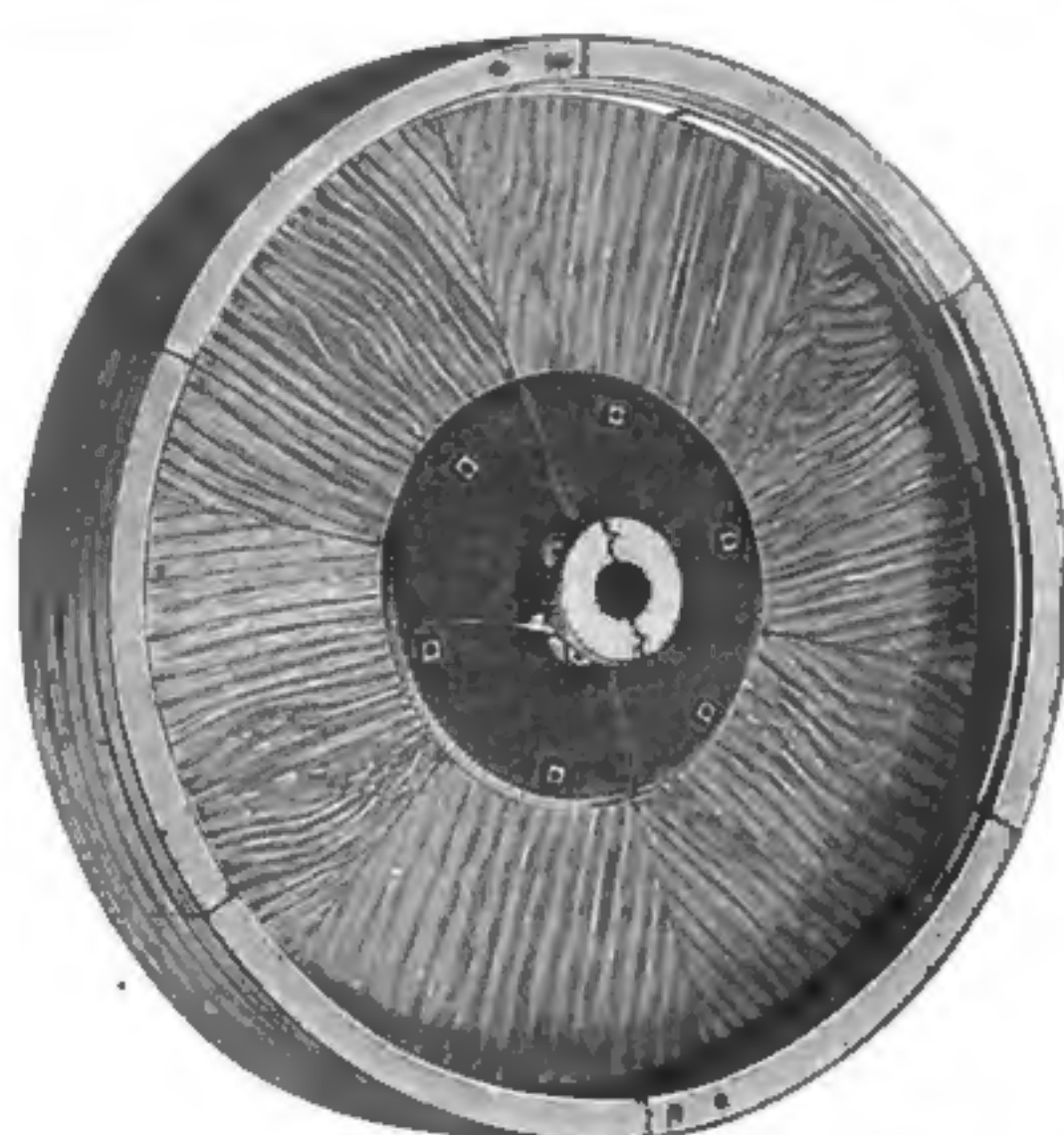
FOR some time past the possibilities of improving pulleys intended for the transmission of power and motion, has attracted the attention of mechanics and inventors, and a number of pulleys, differing essentially and radically from those so long and almost universally in use, have been placed on the market and have met with varying degrees of favor. The latest candidate for public recognition is Bowsher's Overlapping, Split-Wood Pulley, illustrations of which are presented on this page, and of which brief description is appended. Mechanics of experience admit that a belt running over a wood pulley has more "grip" than if run over metal, the difference being from 25 to 60 per cent greater. Well made wood pulleys are preferable to metal ones, because of their lightness and also because belts can be run with far less tension and do the same work. Any person of a mechanical turn of mind knows that heavy pulleys and tight belts create a great deal of extra friction on journals and absorb a large amount of power. Some have put the actual saving by the use of wood pulleys at from 30 to 50 per cent. but be the per cent. what it will it is largely in favor of the wood pulley. Hazwell, the acknowledged authority and most quoted by American mechanics, summarizes thus: "The ratio of friction to pressure for leather belts, when worn over wooden pulleys, is 47; over turned cast iron pulleys, 24. It will require no argument and but little explanation, we think, to convince the reader that the Bowsher wood pulley is built on correct mechanical principles. The overlapping split pulleys, as will be seen by reference to the cuts, are made of segments of wood, the grain all running to the centre, each segment tongued and grooved. To this segmental web the rim is thoroughly glued and nailed, allowing the outside circular segment to overlap the line of separation, this overlap being secured to the inner segment with screws. The centre casting is made in halves, one half having V-shaped lugs at each end of the hub and at the outer extremities of the flange. The other half having corresponding depressions, the flange being located so as to bring the pressure of the rim square over the center of the hub. The halves are secured together with strong bolts. It will be seen that by means of the "overlapping" segment and the interlocking devices, a split pulley equal in strength and symmetrical appearance to any solid one, is produced.

No bolt heads or nuts are allowed to project to catch belts that may hang loose on the shaft. Split pulleys are preferable to solid ones for the reason that they can be easily and quickly secured to a shaft without the necessity of uncoupling and taking down shafting. Any one familiar with this kind of work knows that this item alone frequently equals five times the cost of the pulley. However, where parties wish, solid pulleys built on the same plan (segmental web and rim) can be obtained. The particular advantages claimed for the Bowsher overlapping split pulley are that it cannot shrink, spring or swell so as to get out of true; that it is perfectly balanced; that there are no arms to get loose, but that the support to the rim is continuous; that there are no bolts to catch belts; that the weight is from one-half to two-thirds less than iron pulleys, that it is the most substantial and slightly pulley made, and that it will do more work with the same power than iron pulleys. Forty different sizes, ranging from 12

to 96 inches diameter, and from 4 to 24 inches face are carried in stock, but any odd size will be furnished to order without additional cost to the purchaser for patterns, etc. The manufacturer, N. P. Bowsher, of South Bend, Indiana, needs no introduction to the milling fraternity, and as he will take pleasure in supplying all desired information we have little doubt he will meet with a full measure of success with this new, and, we judge, meritorious article.

BOILER INCRUSTATION.

While there is much to be gained by the use of good compounds for the prevention of incrustation in boilers; there are some troubling features that have not as yet been overcome, says the *American Engineer*. Where the feed-water is heavily charged with mineral matter, the compounds are in most cases useless, or at least there is such an extravagant use of the compound necessary to prevent the scale, that the expense increases beyond endurance. In these cases a mechanical precipitation or collection of the mineral matter is the only remedy, and even then only under certain conditions. The usual method is through the feed-water heater, using the exhaust steam from the engine. By such use the feed-water is heated to a temperature somewhat below the ordinary boiling point of water. The density of the feed-water is decreased as it is heated and the weight of any mineral



BOWSHER'S OVERLAPPING SPLIT-WOOD PULLEY.

matter becomes heavier as the density or weight of water becomes less.

While the increase in weight of the mineral matter can hardly be determined, the decrease in the floating capacity of water can be easily arrived at. The weight of a cubic foot of pure water at the ordinary temperature of 62 degrees Fahr. is about 62.355 pounds; at 215 degrees a cubic foot of the same water will weigh 59.64 pounds; at 298 degrees temperature or that of 50 pounds pressure of steam, a cubic foot of the same water will weigh 57.27 pounds; at a temperature of 338 degrees, or 100 pounds pressure, a cubic foot will weigh 56.14 pounds.

From these densities or weights it is easily seen that the hotter the water is, the better will it act as a precipitating medium or concentrator. The hot water of the ordinary feed-water heater, at a temperature of 212 degrees, is claimed to be an efficient precipitator. A much better result would be attained, if the water be heated to the temperature of water due to 20, 75 or 100 pounds pressure before it were allowed to enter the regular water space of the boiler. While at the temperature of boiling, the water is 4.65 per cent better for precipitation of the mineral matter than that due to water of 62 degrees temperature; at the temperature due to 50 pounds pressure, the water is 9 per cent. better for precipitation than that due to water of 62 degrees; at the temperature due to 100 pounds pressure, the water is 11.18 per cent. better than 62 degree water, while for 200 pounds of steam the water is

14.44 per cent. better fitted for precipitation than water at 62 degrees temperature.

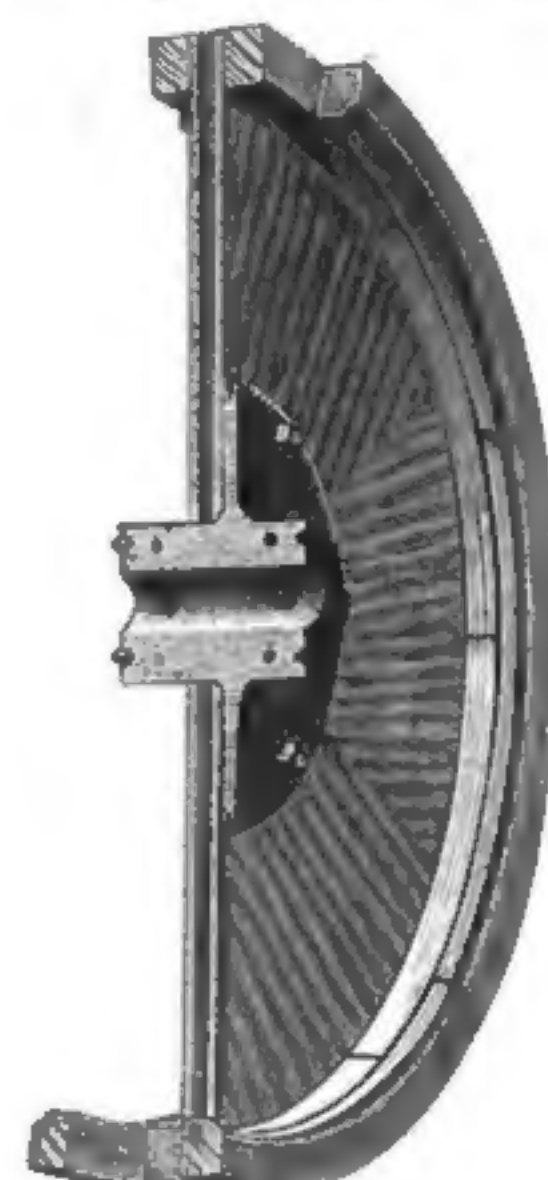
Professor Chandler, of Columbia College, New York, in a report to the New York Central railroad from practical tests, states that boiling water expels the free carbonic acid and causes a separation of the carbonates of lime and magnesia, and if conducted at high temperatures under considerable pressure, results in the almost complete precipitation of the sulphates of lime.

Hence the necessities of high temperatures in the feed-water, if we would precipitate the mineral matter and injurious ingredients, and this must all be effected before allowing the feed-water to enter the regular water-space of the boiler. Such is the right direction for improvement, and a clarifying apparatus should be located either within or in direct and free communication with, the steam-space of the boiler, and kept until it has been thoroughly heated and purified.

—Nearly 10,000,000 pounds of high explosives are used annually east of the Rocky mountains.

—An Italian ship has been sheathed with glass plates, so as to fit the hull, and take the place of copper sheathing.

—The reports of the Patent Office show that a majority of the useful patents taken out are devised by mechanics who have never had the benefits of city education. In other



of vapor an electrical potential, even if that potential were smaller than any that can be indicated by our most delicate electrometers, the aggregation of these particles into rain-drops would easily explain the charge of the most formidable thunder cloud.

HE WAS NOT ASHAMED.

"I should think you would be ashamed of yourself to fight with a little boy half your size," said a lady on the street.

"Do I look ershamed?" asked the boy.

"No, you do not."

"Is eider uv me eyes black?"

"No."

"Eny bites outer me nose?"

"Certainly not."

"Is me ears chawd?" Is der eny mud down me neck? Is me coat torn or me suspenders busted off?"

"No."

"Well, I hain't got nothin' ter be ershamed of. Ef I should fight wid a bigger boy'n me I might have cause ter be ershamed."—*Chicago Times*.

DWIGHT CUSHMAN,



MANUFACTURER OF
The Cushman Scroll Water
Wheel, Combination Turbine
Water Wheel, Iron Flumes for
the Combination Wheel.
The Scroll Wheel Needs
No Flume.
Also Mill Gearing and Shaft-
ing of every description.
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and Prices before buying any
other Wheel.

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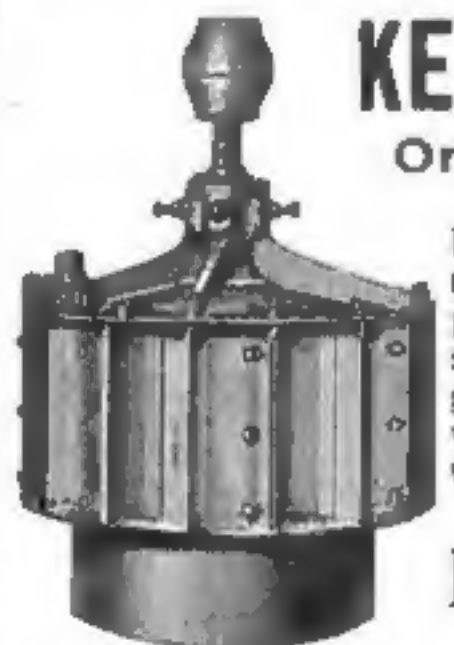
BURNHAM'S IMPROVED

Standard Turbine

IS THE
Best constructed and finished,
gives better Percentage, more
Power, and is sold for less
money, per horse power, than
any other Turbine in the world.
New Pamphlet sent free by



Burnham Bros., York, Pa.



KEISER TURBINE

Only Best Wheel Built.

Examine its construction and be convinced. The only wheel that really distributes and applies the water correctly and scientifically at all stages of gate, and at the same time closes water-tight and has an easy working, balanced, gate. Tell us about your water power.

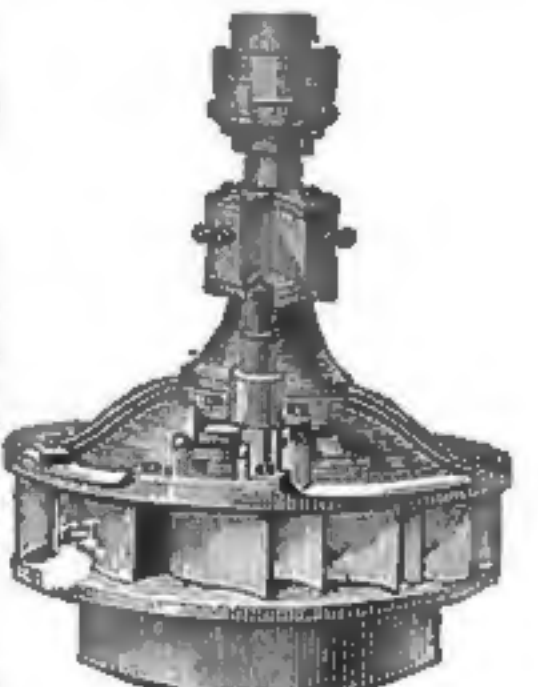
KEISER MACHINE CO.
ALLENTOWN, PA.

MERCER'S

RELIABLE
Turbine Water Wheel.

This wheel is acknowledged one of the best on the market. Has valuable improvements in the construction which is commanding the attention of buyers. Send for catalogue and price list. T. B. MERCER,

WEST CHESTER, PA.
CHESTER CO., PA.



POOLE & HUNT'S LEFFEL TURBINE WATER WHEELS

Made of Best Materials, and in the Best Style of Workmanship.

MACHINE-MOLDED MILL GEARING

From 1 to 30 feet diameter, of any desired face or pitch, moulded by our own Special Machinery.

SHAFTING, PULLEYS AND HANGERS

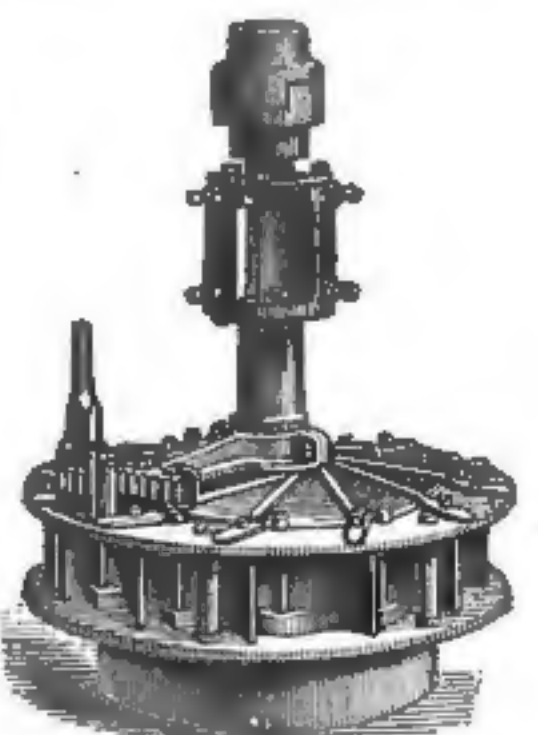
Of the Latest and Most Improved Designs.

Engines, Boilers,

Mixers and General Outfit for Fertilizer Works.

Special Attention given to Heavy Gearing. Shipping Facilities the Best in All Directions.

POOLE & HUNT, BALTIMORE, MD.





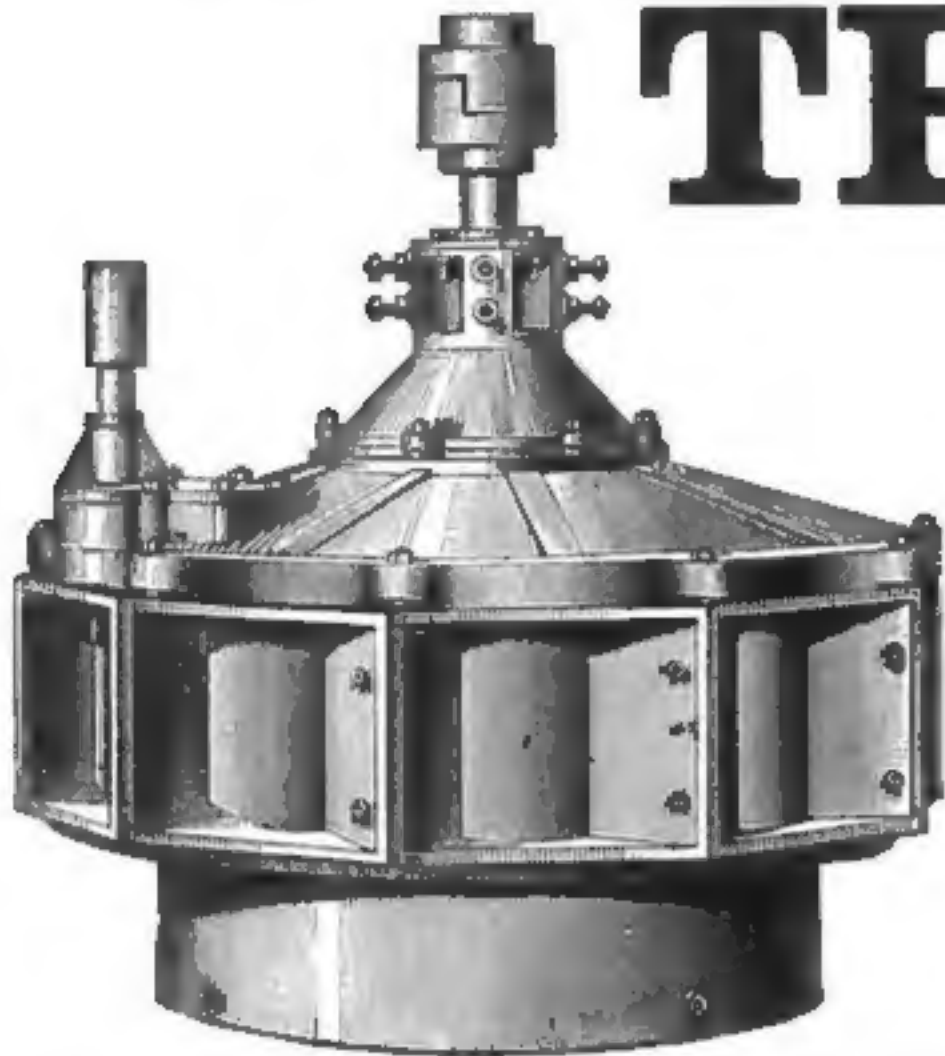
STILWELL'S PATENT LIME EXTRACTING HEATER and FILTER COMB'D

IS THE ONLY LIME EXTRACTING HEATER THAT WILL

Prevent Scale in Steam Boilers, Removing all Impurities from the Water Before it enters the Boiler.
THOROUGHLY TESTED. OVER 3,000 OF THEM IN DAILY USE.

This cut is a fac simile of the appearance of a No. 5 Heater at work on ordinary lime water, when the door was removed after the heater had been Running two weeks. Illustrated Catalogue Free.

STILWELL & BIERCE MANUF'G. CO., DAYTON, OHIO.



THE EUREKA TURBINE

Celebrated as the Best Part-Gate Wheel Ever Built.

Absolutely Unequalled in Efficiency, as Shown by The Accompanying Table.

WE PUBLISH OUR PART-GATE FIGURES.

OTHERS SIGNIFICANTLY OMIT THEM.

No Other Turbine Ever Approached the Above Percentages at Part-Gate.
For Catalogue and Information Address,

W. H. BARBER & CO., ENGINEERS AND MACHINISTS, ALLENTOWN, PA., U. S. A.

From the Records of Actual Tests at the Holyoke, Mass., Testing Flume:

PERCENTAGE OF EFFICIENCY.

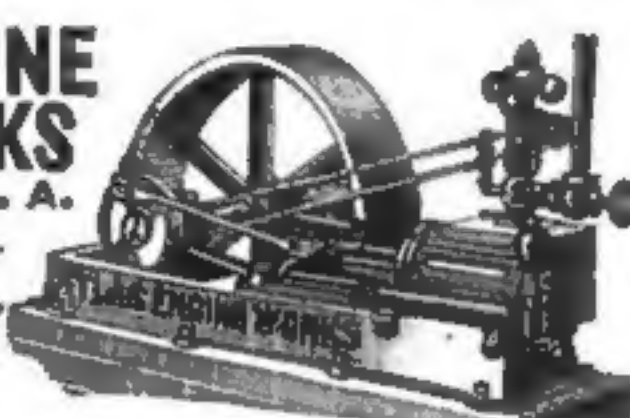
	Full Gate.	$\frac{3}{4}$ Water.	$\frac{1}{2}$ Water.	$\frac{1}{4}$ Water.
24 Inch Wheel.....	.8488	.8416	.8302	.8002
24 Inch Wheel.....	.8306	.7910	.7700	.7008
24 Inch Wheel.....	.8078	.7578	.7275	.6796
30 Inch Wheel.....	.8000	.8011	.7814	.6850

Send for Catalogue and Prices.



ATLAS ENGINE WORKS
INDIANAPOLIS, IND., U. S. A.

MANUFACTURERS OF
STEAM ENGINES & BOILERS.
Carry Engines and Boilers in Stock for immediate delivery.



STEEL CASTINGS

FROM $\frac{1}{4}$ TO 15,000 POUNDS WEIGHT.

True to Pattern, sound, solid, free from blow-holes, and of unequalled strength. Stronger, and more durable than iron forgings in any position or for any service whatever. 20,000 CRANK SHAFTS and 15,000 GEAR WHEELS of this steel now running prove this. CRANK SHAFTS and GEARING specialties. STEEL CASTINGS of every description. Send for Circulars and Prices to

CHESTER STEEL CASTINGS CO.,

Works, Chester, Pa.

407 Library St., Philadelphia.

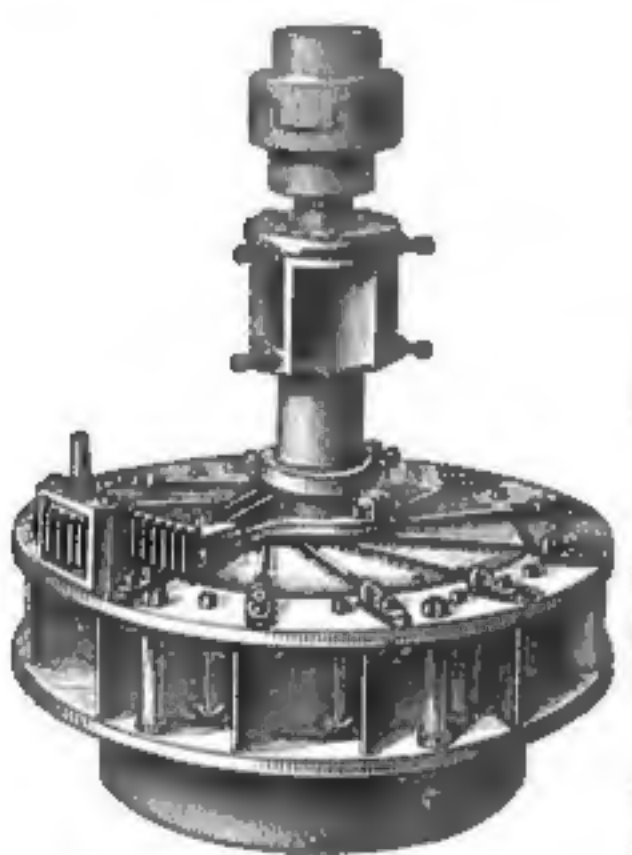
LEFFEL'S WATER WHEEL

MADE BY JAMES LEFFEL & CO.

The "OLD RELIABLE"

with improvements, making it the

**MOST PERFECT TURBINE
NOW IN USE.**



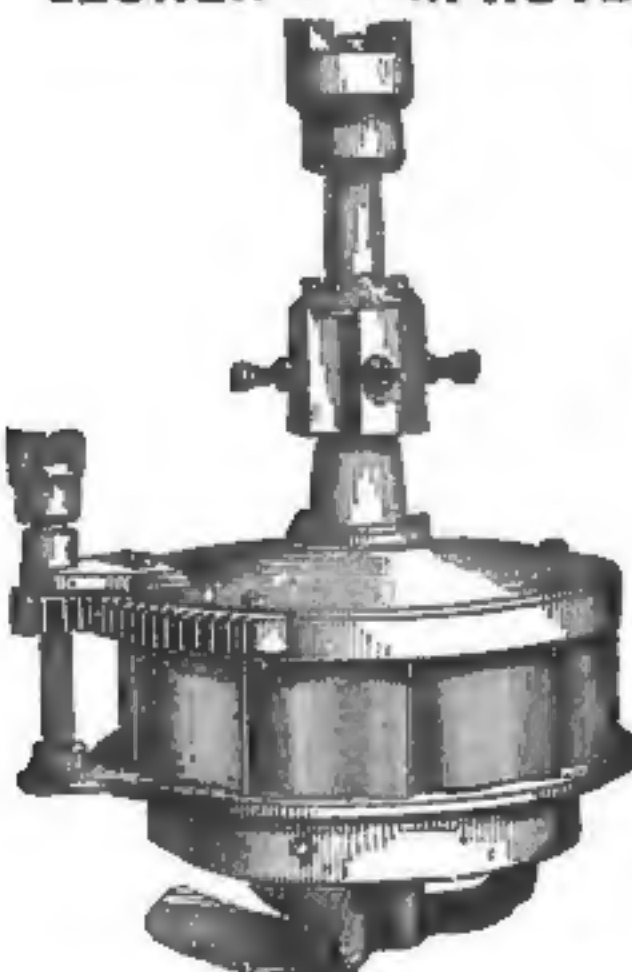
Comprising the Largest and the Smallest Wheels, under both the Highest and Lowest Heads used in this Country. Our new Illustrated Book sent free to those owning water power.

Those improving water power should not fail to write us for New Prices before buying elsewhere. New Shops and New Machinery are provided for making this wheel. Address

JAMES LEFFEL & CO., SPRINGFIELD, OHIO, AND 110 LIBERTY STREET, N. Y. CITY.

LESNER'S IMPROVED TURBINE.

Simple,
Durable,
Strong.
Gate Works
EASILY
—AND—
RAPIDLY.
PERFECT
Satisfaction
—IS—
GUARANTEED.



W. B. WEMPLE'S SONS, FULTONVILLE, N. Y.

Improved Success

Percentage.

Full Gate.....86.29

$\frac{3}{4}$ Gate.....86.07

$\frac{1}{2}$ Gate.....81.90

This Wheel is Durable and Cheap.

Send for Pamphlet to

S. MORGAN SMITH,

YORK, PA.



ALCOTT'S IMPROVED TURBINE WATER WHEEL.
This Wheel gives high results, and is acknowledged the best, most practical and efficient Turbine made. For Simplicity, Durability, and Tightness of Gate it has no equal. State requirements and send for Catalogue to

T. C. ALCOTT & SON, MOUNT HOLLY, N. J.



Our Shipping Facilities are Not Excelled in the Whole Country. We can Always Obtain Lowest Freight Rates.

CASE!

Our 6x12 and 6x18 two and four roll mills, Little Bismarck, with our Automatic Feed, together with our Case Purifier and Centrifugal Reels, etc., all of which are adapted to each other, are what is making

our line of machinery for smaller mills just now so famous. Every miller is highly pleased with them. No combination plan or short cut of any kind can equal the results we are obtaining. Golden praise comes to us from every quarter over them.

OUR METHOD IS SIMPLICITY ITSELF, AND THE COST AT THE MINIMUM.

Our Machinery for Large Mills is Just as Successful as for Small.
CASE MANUFG. CO.
COLUMBUS, - OHIO.



A CHANCE FOR SOME ENTER-PRISING MAN OR FIRM.

Innumerable chances are offered for purchasing flour mills, but seldom is a really first class mill offered for sale. As will be seen by the advertisement on page 295 of this issue, there is to be an administrators' sale at auction of the White Star Mills, at Cincinnati, Thursday, September 11th, 1884, on account of the death of the owner. Being a legal sale and the property must be sold, it will be an unusual opportunity to secure a good mill at one's own price. The property consists of a lot fronting 34 feet on Webster street and 95 feet on Cogswell Alley, running back and fronting 34 feet on Foster alley in the rear, with streets and alleys well paved and curbed.

The mill is 34x60 feet, four stories high, and substantially built of brick, being separated from the warehouse by heavy walls. The warehouse, immediately in rear of the mill is an excellent new four-story brick building, containing large wheat bins and steam platform elevator, and is conveniently arranged for storing flour, receiving grain, and delivering bran and middlings to the local trade. The millwright work is of the best quality, and it is confidently believed that the mill is capable of producing as good results in yield and quality of flour as any in the United States. The capacity of the mill is from two hundred and seventy-five to three hundred barrels per day. At thirty cents per barrel profit, which would be a low estimate, the net earnings of the mill would be about \$90.00 per day. The brands of flour made by this mill enjoy a high reputation both at home and abroad, and a large part of the product can be disposed of profitably to the local trade. The facilities for obtaining the fine wheat from Southern Ohio, Illinois, Indiana, and Kentucky, render the location of Cincinnati a very favorable one for milling, and during the past four years the business of this kind has been constantly increasing. The local trade for flour is large and profitable, and the market for feed and offal is always good, the demand being generally better than the supply, dealers taking away daily all that is produced. The facilities for shipping to the South and East are of the best, either by rail or water.

The machinery is new and of the most improved styles, adapted for modern milling, all of which is in perfect running order having been in use only a short time, and consists of one Harris-Corliss 16x42 automatic cut-off engine, two boilers, 52x16 feet, outside of mill building, five double Livingstons roller mills, 9x24, five double Livingston roller mills, 9x18, four Noye roller mills, 12x24, six Smith purifiers, (new cloth), three Matteson packers, one McGowan pump, one Richmond beater and brush combined, sixteen bolting reels, 16 feet (new cloth), two Fir centrifugal reels, (new cloth), eight scalping reels, 8 feet (new cloth), one Howes & Ewell separator, one Hughes bran duster, one Richmond separator, two Webster Agitators, two Langlois Mixers, one Eureka brush, with all necessary shafting, pulleys, belting, elevators, spouts, scales, piping, etc.

Notes from the Mills.

C. A. Gambrell Mfg. Co., Baltimore, Md., have put in two pairs of Allis rolls.

Britt, Iowa, is to have a \$15,000 flouring mill, having raised a bonus of \$2,000.

A new 18,000-bushel elevator will be erected at Eagle Bend, Todd county, Minn.

R. Whitelaw, Woodstock, Ont., has ordered three double roller mills of E. P. Allis & Co.

Dewey & Stewart, of Owosso, Mich., have bought five Gray double rolls of E. P. Allis & Co.

Edward Locke, a Minneapolis grain dealer, sues the Bradstreet company for \$25,000 for libel.

It is estimated that California will have a million and a half tons of wheat for export this season.

Williams Bros., Kent, Ohio, have recently purchased two complete double roller mills from E. P. Allis & Co.

Orth & Hamke, Erfurt, Wis., have bought one complete double roller mill from E. P. Allis & Co., of Milwaukee, Wis.

Beach Bros., of Beatrice, Neb., have bought a Gray's noiseless belt, double roller mill of E. P. Allis Co., Milwaukee, Wis.

One No. 1 double Case purifier has lately been shipped by the Case Mfg. Co., Columbus, Ohio, to L. H. Turner, Blair, Neb.

Pillsbury & Hurlburt have begun the erection of an elevator at Caledonia, Dakota, with a storage capacity of 100,000 bushels.

Chas. F. Nieson, of Sedalia, Mo., has recently purchased three complete Gray double rolls of E. P. Allis & Co., Milwaukee, Wis.

Dunnewold & Lubbers, Cedar Grove, Wis., have ordered one double and one single machine, all complete, of E. P. Allis & Co.

Flenniken & Graham, Dubuque, Iowa, have ordered a pair of rolls with automatic feed, from Case Mfg. Co., of Columbus, Ohio.

The Case Mfg. Co., Columbus, Ohio, have an order from Geo. W. Miller, Angola, Ind., for one pair rolls with patent automatic feed.

The Case Mfg. Co., Columbus, Ohio, have an order from Leggate & Everdeen, Centerville, Ind., for a patent automatic feed for their rolls.

Simon Gebhard & Son, of Dayton, Ohio, have ordered two pairs of rolls with automatic feed, from the Case Mfg. Co., Columbus, Ohio.

The Case Mfg. Co., Columbus, O., have an order from Wm. Randall, Brantford Springs, Pa., for two pair rolls with patent automatic feed.

Geo. Seirs, Shopier, Wis., has placed an order with the Case Mfg. Co., Columbus, O., for five pairs of rolls with automatic feed, scalping chest, etc.

Goodhue & Nelson, Garrettsville, Ohio, have placed an order for two pair of rolls, with patent automatic feed, with the Case Mfg. Co., Columbus, Ohio.

The late copious rains have given Central Kansas the largest crop of corn ever produced. There

purifiers, centrifugals, &c., for a full gradual reduction mill on the "Case" system.

At Sandusky, Ohio, August 27, the Baltimore and Ohio railroad elevator, containing 42,000 bu. of wheat, was completely destroyed by fire. The fire was caused by a hot box in the machinery in motion. Fully insured.

J. C. Grinter & Co., Perryville, Kan., have ordered from E. P. Allis & Co. a No. 2 four-break reduction machine, and two complete double roller mills, and special machinery and iron work necessary for a complete roller mill.

J. Major & Sons, Sarina, Ont., have ordered from E. P. Allis & Co. a four-break reduction machine and double roller mill, together with the necessary special machinery and iron work to fit them up in good shape, on the roller system.

The Case Mfg. Co., Columbus, O., have been given the contract of M. & K. Hardesty, Carrolton, O., for a complete outfit of rolls, breaks, purifiers, centrifugals, scalping reels, etc., for a full gradual reduction mill on the Case system.

At Sherman, Texas, Aug. 27, the Farmer Mill, on West Houston street, was destroyed by fire. The building is a total loss. There was \$1,000 insurance in the Sun Mutual of New Orleans. The property was valued at \$5,500. A small frame house caught fire from heat, but the flames were extinguished without any damage. The cause of the fire is unknown.

Near Ellettsville, Mo., Aug. 26, fire originated in the one-story frame engine room adjoining D. L. Price's Tuscan mill (flouring) at 4026 Easton avenue. It was consumed, and the main building, a three-story brick, was next attacked. The



WHITE STAR MILLS, CINCINNATI, OHIO.

is scarcely a field of inferior corn within fifty miles of Newton.

Hunter & Johnson, Mechanicsburg, O., have placed an order with the Case Manufacturing Co., Columbus, Ohio, for one pair rolls with patent automatic feed.

Near Lexington, Ind., Aug. 27, the large flouring mill of Milton Kimberlin was totally destroyed by fire. It caught fire from the smoke stack. Loss, \$4,000; insurance, \$2,000.

Jonathan Bartley, the well-known millwright of German Valley, Pa., is remodeling the mill of Stephens & Co., Bartley Station, N. Y., and putting in a line of Allis rolls.

A. F. Ordway & Son, Beaver Dam, Wis., have ordered six sets of rolls from the Case Mfg. Co., Columbus, O., to be shipped to Clintonville, Wis., all to have patent automatic feed.

Jones & Stacy are putting a four-break reduction machine, and a Gray's noiseless belt roller mill into their mill at Algona, Iowa. E. P. Allis & Co., of Milwaukee, Wis., furnish them.

J. S. Reed & Co., Sullivan, Ind., through W. E. Catlin & Co., of Chicago, Ill., have placed an order with the Case Mfg. Co., Columbus, O., for one pair of rolls, with patent automatic feed.

H. C. Smith & Co., Lawrenceburg, Kan., have placed an order with the Case Mfg. Co., Columbus, O., for one "Little Giant" break machine and two pair rolls with patent automatic feed.

The large mill of Small & Ellis, near Rathdrum, Idaho, was totally destroyed by fire Aug. 23. Loss, \$58,000; insurance light. The owners are heavy railroad contractors and suffer severely.

J. W. Chatburn, of Harlan, Iowa, has concluded to change his mill to the roller system, and after investigating the different systems, placed his order with the Case Mfg. Co., Columbus, O., for an outfit of breaks, rolls,

mill was burned out, except the engine and boiler, but the walls were left standing in fair condition. \$700 worth of uninsured stock was destroyed. Mill and machinery were insured for \$3,500.

At Waterloo, Ill., Aug. 31, Kehlor Bro.'s flouring mill, the largest in the state, took fire in the basement. The total loss is estimated at \$150,000 to \$200,000. Insurance about \$100,000. Sixty-five men are thrown out of employment. Thirty thousand bushels of wheat in the mill and elevator were destroyed, and the cooperage warehouse was badly scorched. Six hundred barrels of flour were burned. Mr. Kehlor estimates his loss at \$110,000 over all insurance. The firm own the Laclede mills in St. Louis, and mills in Edwardsville, Ill. The Waterloo mill was built a number of years ago, but little remained of the original structure, as in 1879 it was rebuilt, reconstructed in 1880, and a few months since the new roller process was put in to bring the mill up to the proper standard. The cooperage warehouse, the shops and flour warehouse, were saved from destruction. The mill will not be rebuilt unless the citizens of Waterloo and vicinity contribute a portion of the sum required, as the Kehlor Bros. are not ready or willing to risk as much as will be required in that vicinity again.

Advices from Boston, Mass., indicate that the frost of August 24 caused great damage to growing corn and buckwheat in northern New England. In many places corn was still in milk, and the crop will prove a total failure. Following the drouth, the frost will cause a serious loss to farmers. At Waterbury, Vt., in many fields the buckwheat crop is ruined or greatly damaged. At Lewiston, Me., the frost was confined to lowlands, and no damage is yet reported. Considerable loss to farmers is reported from the vicinity of Littleton, N. H. Contocook reports considerable damage there and in the Warner River Valley. Concord, N. H., reports quite heavy frost in the Merrimac River Valley last week,

causing considerable damage to vegetation. At Cannan one morning the mercury stood at 38 degrees, being a change of more than 78 degrees in temperature since the week before. A large amount of garden stuff was destroyed there by that night's frost. Several other towns in Central Vermont had very heavy frosts last week. Ice formed in the vicinity of Middlesex, Vt., and garden crops were much injured.

As previously noted by THE MILLING WORLD, the town of Groton, Dak., is offering a bonus of \$3,000 to parties who will erect a fifty to one hundred barrel roller mill on the latest and most improved system. The mill must use steam power, and in addition to the bonus it is expected that the town will donate the requisite water supply from the artesian well now being put down to meet the needs of the town. The following conditions, we learn from the *Millwright and Engineer*, are attached to the bonus: Flour must be exchanged at the rate of 32 pounds of flour and 12 pounds of bran for 60 pounds of good, number one wheat, and for other grades in proportion; toll for grinding coarse grains to be such as custom prescribes; and a bond given for the fulfillment of the contract. The bonus will be raised by subscription, payable one-half in sixty days from signing contract, and one-half in four months thereafter. Notes will be given on above time. One proposition has already been received and the committee having the matter in charge is waiting further offers. Further information can be obtained by addressing W. C. Allen, chairman of the committee having the matter in charge, Groton, Dak. Although the opening does not promise a bonanza or a chance for getting rich without work, still there is every opportunity for a good active business man to build up a valuable property.

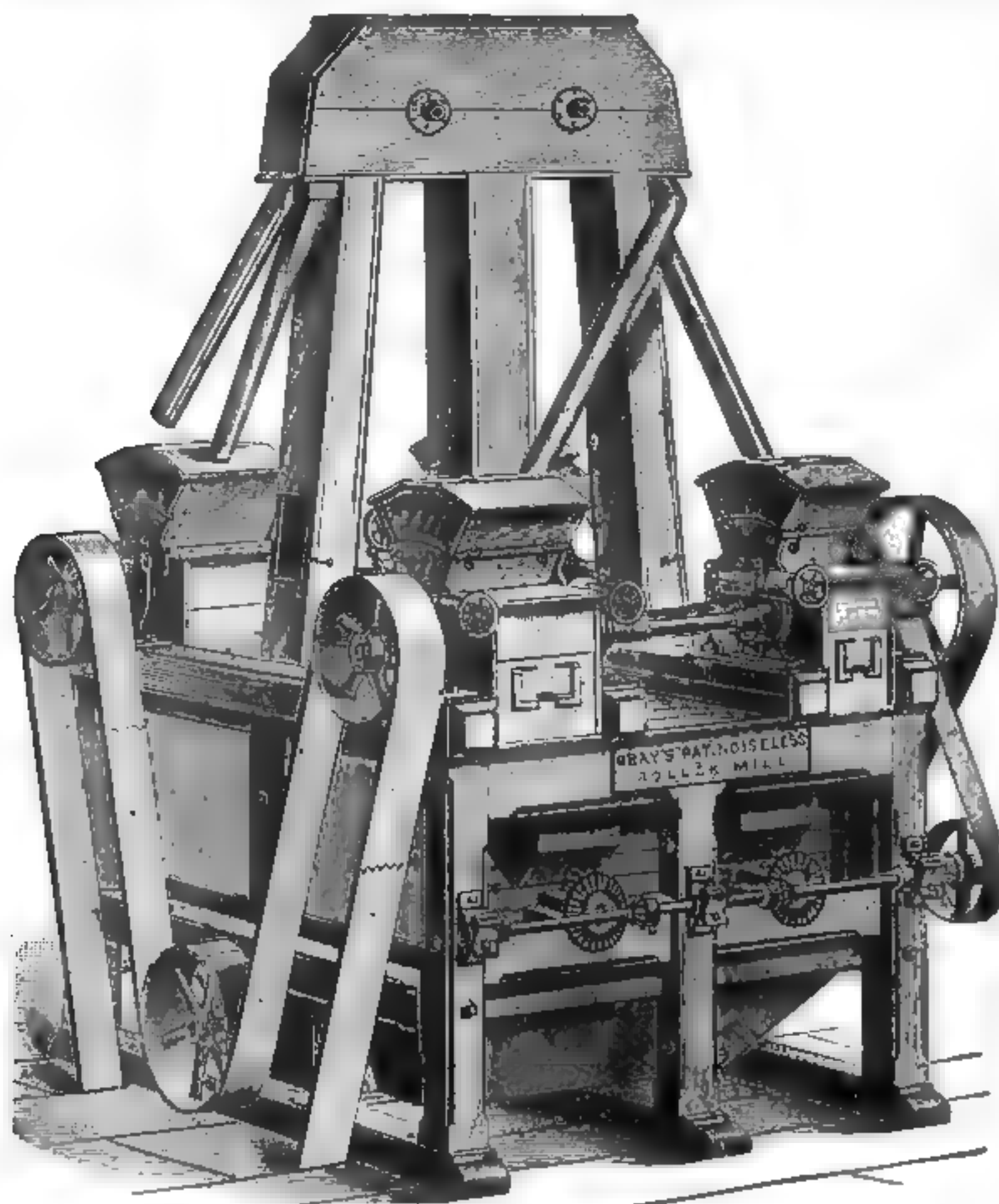
The Mill Furnishing Trade.

E. P. ALLIS & Co., of the Reliance Works, Milwaukee, Wis., have received the following orders for Gray's noiseless belt roller mills from the trade during the past month: Through Wolf & Hamaker, of Allentown, Pa.: Three double machines for W. Hummel, Seigfreids Bridge, Pa.; five complete double machines for J. B. Hursh & Bro., Newville, Pa.; six complete double machines for the Patterson mill at Holland Station, Pa.; four complete double machines for Fritsch Bros., Norristown, Pa.; four complete double machines for a mill they are building at Betchelsville, Pa.; five complete double machines for Adam Stout, Shoemakersville, Pa.; a No. 2 four-break machine and two double roller mills for Richard Stephens & Co., Bartley Station, Pa. Through Richmond City Mill Works, Richmond, Ind.: Four double complete machines for W. Ralston, New Carlisle, Ohio; five complete double machines for Hamilton Bros. & Co., East Liberty, O. From the Great Western Mfg. Co., Leavenworth, Kan., sixteen complete double machines. Through Willford & Northway, Minneapolis: Four complete double machines for Sorlien Bros., Granite Falls, Minn.; one double machine for M. Gregson, Ramsey Station, Minn. From Haggerty, Hunter & Co., Peoria, Ill., five double machines, all complete. From L. V. Rathbun, Rochester, N. Y., three complete double machines. From Richards & Butler, Indianapolis, Ind., four complete double machines.

THE MILLER CO., at present of Canton, Ohio, manufacturers of steam pumps and roller mills for flour mills, have been induced by the liberality of the citizens of Crestline, Ohio, who gave them a donation equal to \$20,000, to move their works to Crestline. The erection of the building has been commenced. The foundry is 60x80, with core ovens and outbuildings for stock and reverberatory furnace. The main building is 420 feet long and has an average width of 40 feet. The pattern room is 40x50 feet, and the blacksmith shop, two stories, 40x50 feet. The main building has a frontage by railroad of 700 feet, with a union switch from the two railroads, the C. C. & I. and the Pennsylvania system. The Union freight houses are but across the street from the works, which will, with a short track, enable the company to dispense with teaming. The company will not need to purchase any fuel for heat, light, or power, and will melt their iron from a reverberatory furnace. The whole will be supplied with natural gas, of which they have a liberal supply from a well sunk by them on the premises; at present the well is about 400 feet deep. The natural gas known to be in the vicinity was the chief inducement that led the company to move their works from Canton to Crestline. The removal will occur in October. The company have many other specialties for manufacture besides steam pumps and roller mills, castings of all kinds being a leading specialty, as by reason of using gas for fuel, strong, clean and soft castings are secured.



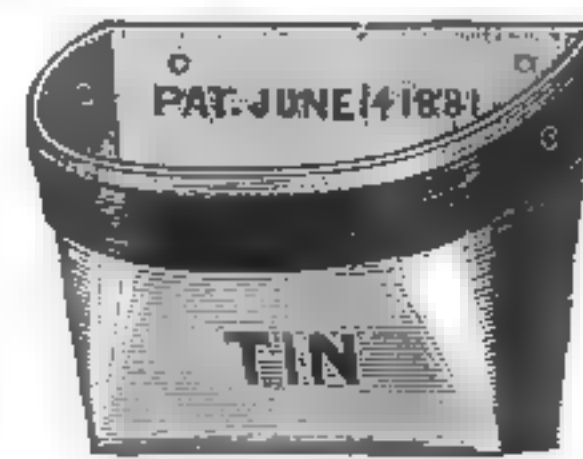
PROVED BY TWO YEARS CONSTANT USE THE BOSS ELEVATOR CUP



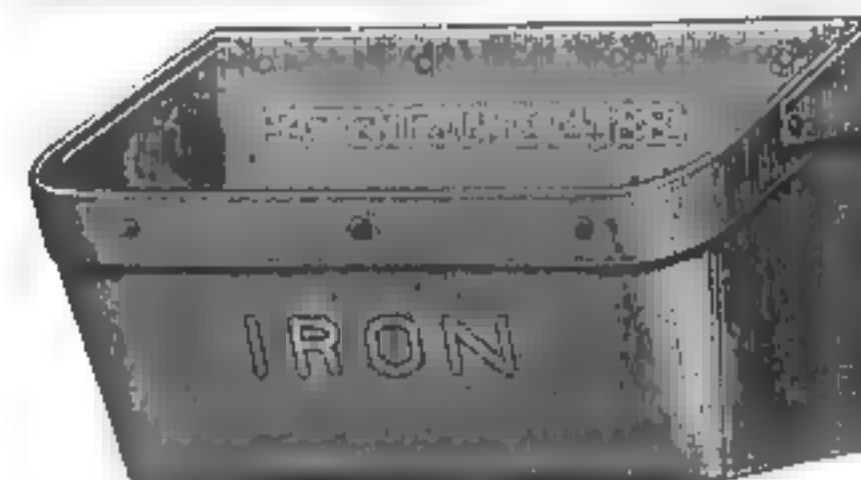
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4-BREAK-4
REDUCTION MACHINES,
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*Economizes Room,
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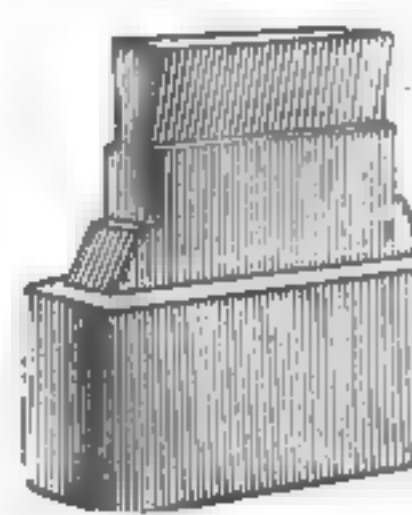
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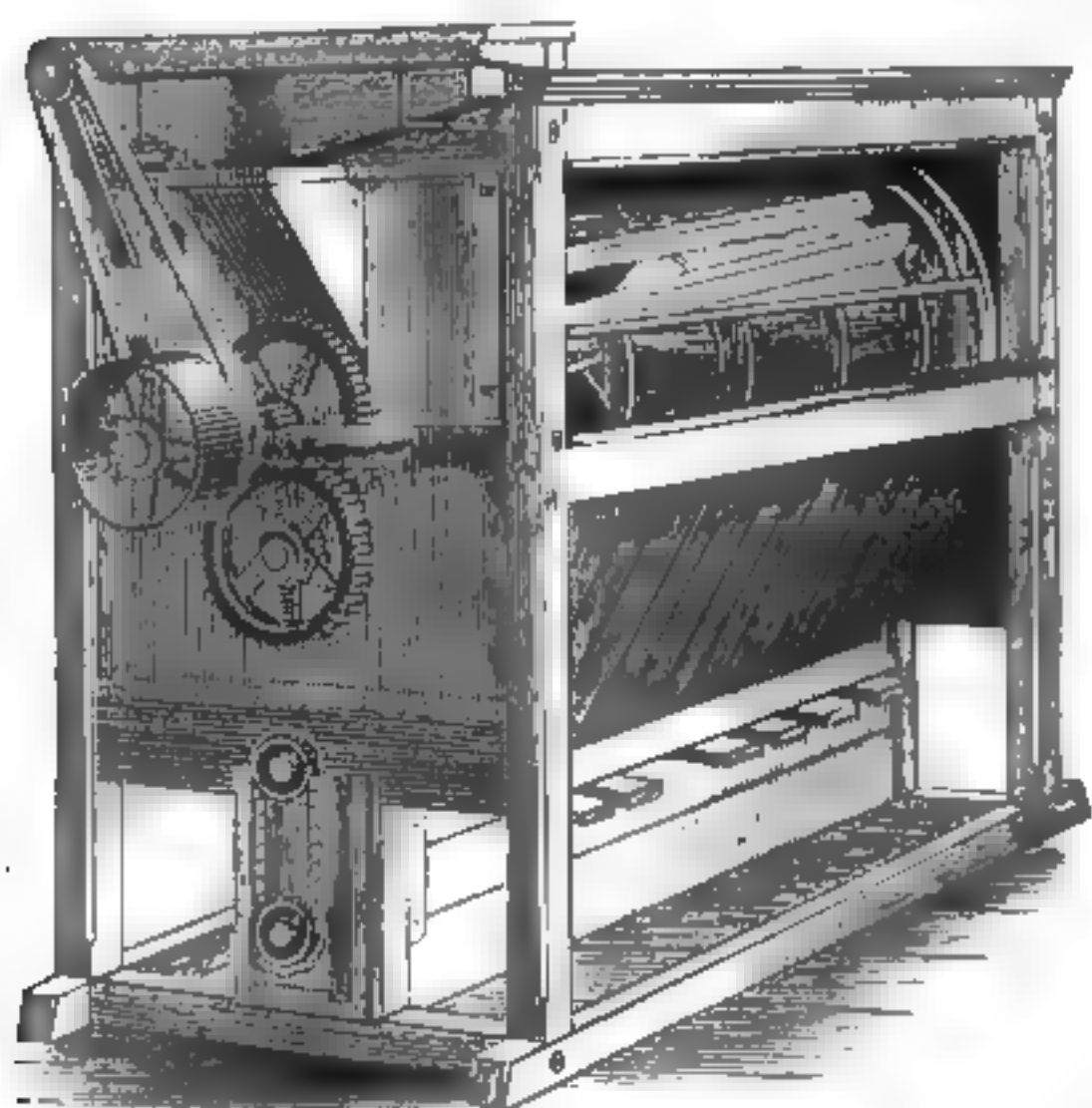
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IS BEYOND QUESTION THE
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Yours respectfully,
CHAS. S. DURST, Supt.

OFFICE OF LUDLOW MILLS, DAYTON, OHIO, April 23, 1884.

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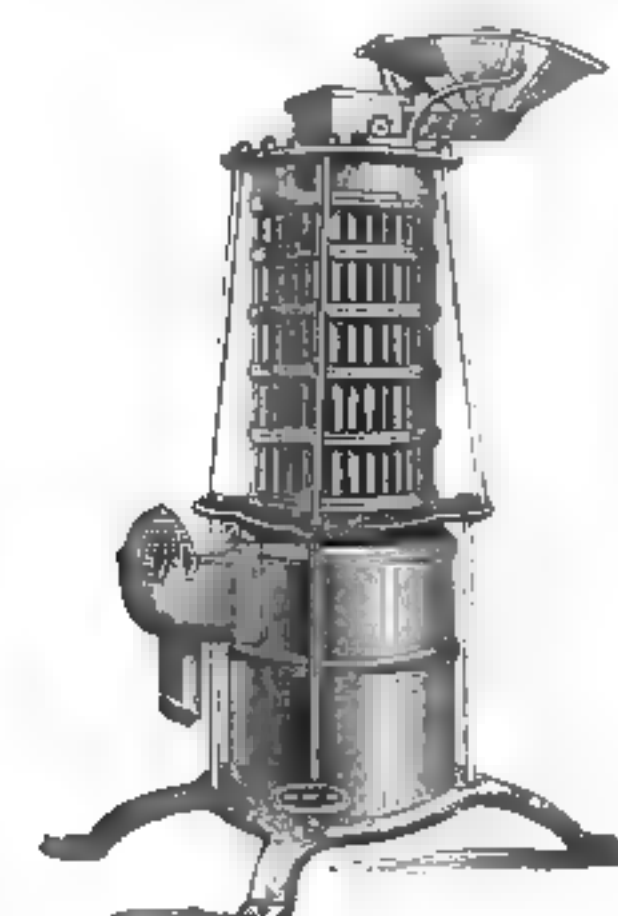
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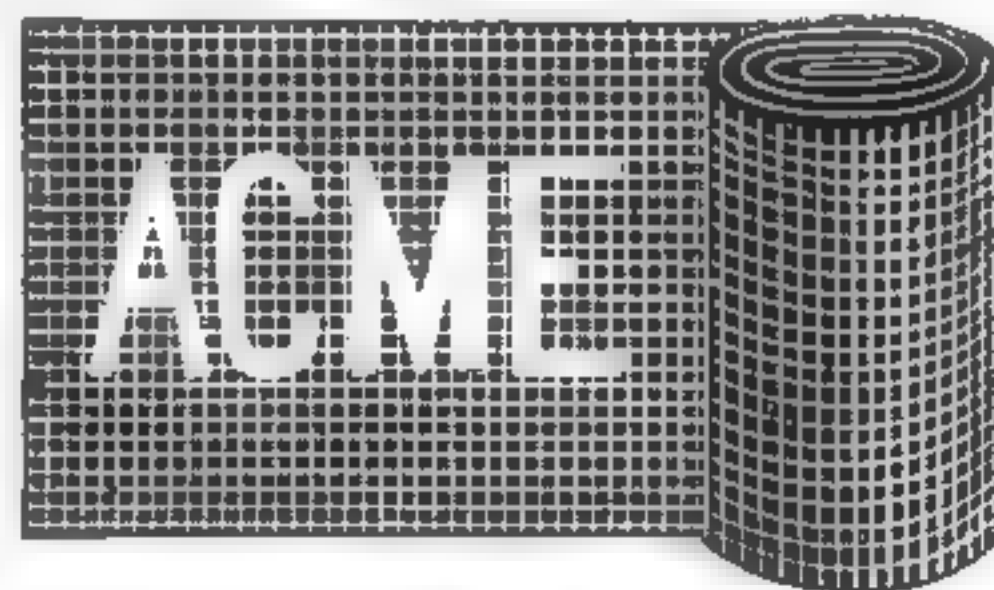
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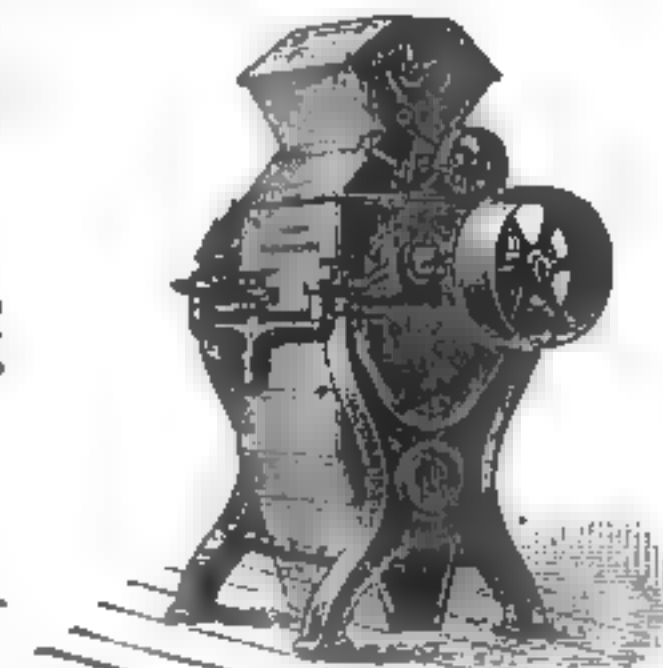
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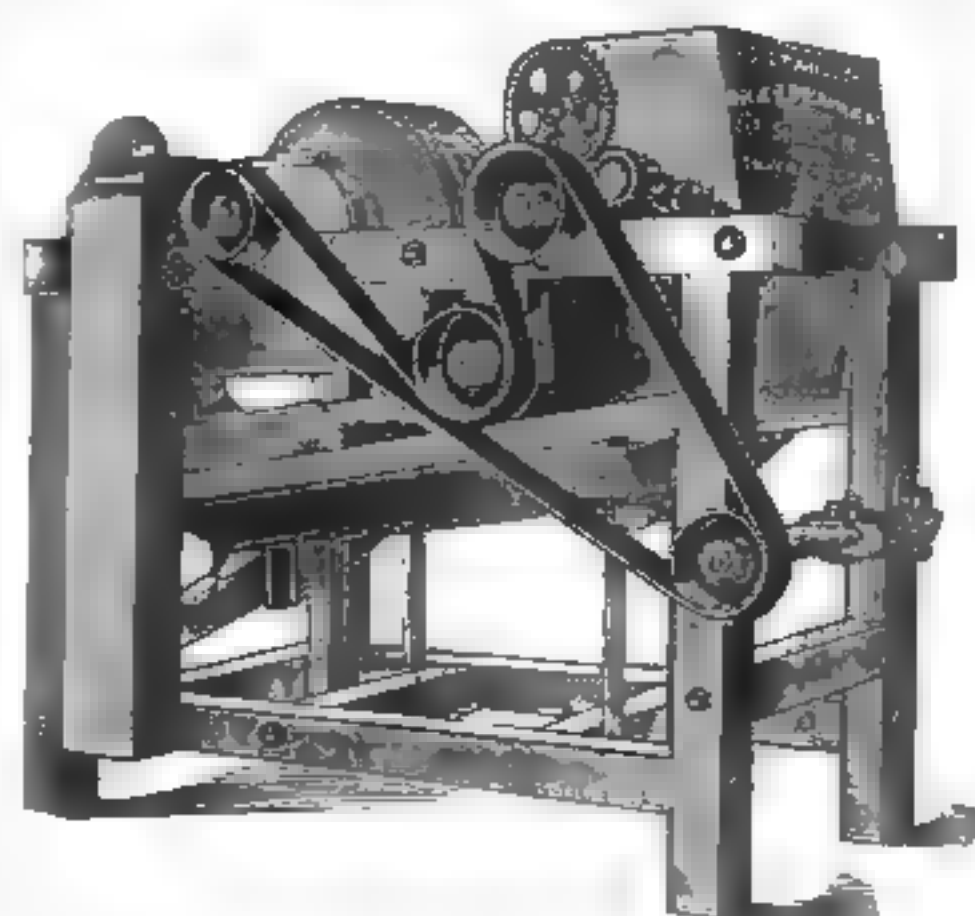
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THE PRICE OF WHEAT.

IN the *Cultivator and Country Gentleman* for August 28, W. I. Chamberlain, of Columbus, Ohio, has a really valuable contribution upon this subject which we reproduce as worthy of study by a large majority of our readers. He says:

"Cash No. 2 wheat" is quoted at 78½ cts. per bushel to-day (Aug. 14) in Chicago. Cash or spot No. 2 is really No. 1, or best quality wheat. The shippers at interior points in Ohio are now paying only 75 cts. for best quality wheat. It started at 85 and 90 cts., and farmers sold quite freely, but at 75 cts. the sales have practically stopped. Times are hard; it is exceedingly desirable that the wheat should begin to move freely to relieve the stringency. Is it wise, then, for farmers to hold wheat for an advance?

Patrick Henry said the lamp of experience was the only light he had to guide his steps. In order to let this lamp shine clearly on the question as to the future price of wheat, I have prepared the accompanying table. It has cost several evenings of hard work to arrange and average the figures so as to get any clear light from them. So far as I know, the figures have never before been collated, condensed and arranged in this form, or at least not published. The western wheat crop is harvested mainly in July, and the spring wheat mainly in August, and sold till and after the next harvest, whereas the figures for sales have usually been given for the calendar year, and the exports have been tabulated for the fiscal (Treasury Department) year, July 1st of one year to July 1st of the next. The fiscal year has corresponded to the crop of the year before, and the calendar year of quotations has covered the sale of half of two years' crops. And so endless confusion has resulted.

In the following table I have arranged on each line the year (Aug. 1 to Aug. 1), the bushels harvested, bushels exported, and the average price each month till the next crop begins to move freely—August 1st of the next year. Hence a single glance shows the tendency of prices each crop year, as affected by the size and quality of the crop, and the amount of export.

The average price for each month I obtained by adding the *daily quotations* each month for fourteen years, and dividing each by the number of days quoted in the month. I took the highest quotation for each day, to save time. It will average about half a cent above the average of all the sales for each day.

In the first right hand column except one, I have given the average price for each year, obtained by adding the prices for each month of each year, and dividing by 12, and at the right hand column the average export price. At the bottom of the table I have given the average of fourteen years, and then of the first and second seven years, for the crop, the export and the price each month. It is averaged both ways and cross-proved. The figures for the total crop are from the U. S. Department of Agriculture, those for export from the U. S. Treasury Department, and the monthly prices are arranged from official daily quotations for fifteen years of the Chicago Board of Trade, published by E. A. Driver & Co. of Chicago, and are exact and reliable. If the reader will examine the table carefully for a few moments, he will understand the following points.

A FEW DEDUCTIONS.

1. Cash No. 2 wheat at 78½ cts., now in Chicago, is far lower than at any time in fourteen years. Only three times in fourteen years has it averaged below \$1 through August, viz., in 1876, 88 cts.; in 1879, 86 cts., and in 1880, 89 cts.—nearly 10 cts. higher than now on the average; and in each of these instances it advanced rapidly before December to \$1.11, \$1.16 and \$1.07 cts. respectively, and averaged for the year

\$1.26, \$1.11 and \$1.01 respectively. Examine the table carefully on this point.

2. On the average for the first seven years of the fourteen, wheat ruled lowest in November, advanced steadily till July 1st, receded slightly in July, reached the highest point in August, and then receded till December 1st. See the table.

3. On the average for the last seven years, wheat has ruled lowest in August, and steadily advanced till May 1st, when the promise of a full crop has "cast its shadow before" and steadily depressed prices till August. This is normal and legitimate, and shows the effect of more prompt and accurate crop predictions or reports. These were "seven years of plenty," except 1881, which was only a three-fourth crop, falling nearly 120,000,000 bushels short. This was clearly announced or predicted in the Ohio Crop Reports of April and May of that year, and later in the U. S. Department Reports. And it was believed, for instead of receding from May on as in average years, the prices ran (See table), April, \$1.02; May, \$1.04; June, \$1.11; July, \$1.14; August, \$1.27; September, \$1.30; October, \$1.36.

4. The general average of daily prices for the first seven years, in Chicago, was \$1.11; for the second seven years it was \$1.10, and for the whole fourteen years it was \$1.10½. But the export prices were, in currency, first

DEMAND AND PRICE.

6. The foreign demand has always absorbed our entire surplus—if not each year, then each two years. A short crop always means a small export, and a large crop means a large export, be our prices high or low. (See the table.) For the first seven years our average population was 43 millions (census averages), our average acreage was 21,765,000 (U. S. Dep't figures), our average export was 60,652,000, and our average crop was 265,606,000. (See table.) If we figure seed at 1½ bushels per acre, and bread for home consumption at 4½ bushels per capita, we have the average total consumption as follows, for the average of the first seven years, in round numbers:

Seed, 21,765,000 acres at 1½ bush.....	32,648,000
Bread, 43,000,000 people at 4½ bush....	193,500,000
Export.....	60,652,000
Total consumed.....	286,800,000
Total average crop.....	265,606,000

This leaves an apparent average deficiency of 21,200,000 bushels. But the seed, bread and export are quite accurately known, so that the U. S. Agricultural Department estimates of the crop seem to have been rather short. The point is that the export demand took all we had.

For the next seven years of large crops, we have this showing: The average acreage

WHEAT PRICES IN CHICAGO FOR FOURTEEN YEARS.

Harvest and Sale of Crop.	Bushels Harvested.	Bushels Exported including flour.	Average Price in Chicago for No. 2 Cash Wheat.												Average Export in Chicago, points of shipment.	Av. price Wheat at points of shipment.
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.		
1869-70.....	260,146,900	52,169,118	\$1.88	\$1.22	\$1.01	\$0.89	\$0.85	\$0.79	\$0.81	\$0.78	\$0.80	\$0.97	\$1.11	\$1.16	\$0.96	\$0.94
1870-71.....	235,884,709	50,273,190	1.14	1.08	1.06	1.08	1.06	1.20	1.24	1.26	1.28	1.28	1.28	1.17	1.17	1.04
1871-72.....	280,722,400	87,738,487	1.12	1.17	1.19	1.20	1.19	1.23	1.25	1.22	1.27	1.30	1.42	1.27	1.26	1.26
1872-73.....	249,997,100	50,733,672	1.86	1.21	1.12	1.07	1.15	1.23	1.22	1.20	1.20	1.29	1.32	1.21	1.21	1.24
1873-74.....	281,254,700	89,463,351	1.19	1.09	1.04	1.02	1.18	1.23	1.20	1.30	1.24	1.22	1.20	1.12	1.16	1.15
1874-75.....	309,102,700	70,926,253	1.01	.97	.89	.89	.90	.89	.85	.91	1.08	1.00	.98	1.14	.95	.94
1875-76.....	292,136,000	73,782,926	1.23	1.12	1.11	1.07	.96	.99	1.02	1.01	1.01	1.08	1.05	.94	1.06	1.00
1876-77.....	289,356,500	55,372,103	.89	1.04	1.10	1.11	1.20	1.29	1.29	1.25	1.47	1.61	1.49	1.40	1.28	1.04
1877-78.....	361,194,146	90,167,959	1.13	1.14	1.11	1.09	1.12	1.05	1.07	1.08	1.11	1.09	.90	.99	1.08	1.08
1878-79.....	420,122,400	147,587,649	1.08	.88	.81	.82	.83	.84	.90	.92	.89	.96	1.04	.97	.91	.78
1879-80.....	448,756,630	180,304,180	.86	.95	1.14	1.16	1.20	1.25	1.23	1.21	1.12	1.16	.95	.94	1.11	1.11
1880-81.....	498,549,868	186,321,514	.89	.92	.99	1.07	1.01	.99	.96	1.00	1.02	1.04	1.11	1.14	1.01	.96
1881-82.....	383,280,090	121,892,389	1.27	1.30	1.26	1.28	1.27	1.30	1.27	1.32	1.33	1.26	1.32	1.31	1.30	1.19
1882-83.....	504,185,470	147,811,816	1.08	1.01	.95	.98	.94	1.00	1.08	1.06	1.06	1.12	1.08	1.01	1.02	.88
Average of 14 years..	340,549,258	96,723,150	1.11	1.06	1.06	1.04	1.07	1.09	1.10	1.10	1.13	1.18	1.16	1.18	1.10	1.04
Average 1st seven years	265,606,358	60,652,427	1.20	1.19	1.06	1.02	1.04	1.06	1.09	1.08	1.12	1.19	1.19	1.14	1.11	1.06
Average 2d seven years	416,492,158	132,798,873	1.01	1.08	1.07	1.07	1.10	1.10	1.12	1.12	1.15	1.18	1.14	1.11	1.10	1.00

seven years, \$1.09; second seven years, 97 cts., and for the whole fourteen years, \$1.03. The export figures are lower than Chicago Cash No. 2, because the lower grades of wheat mainly are exported, and because it is exported *most when lowest*, and the average price is reckoned according to bushels shipped, and not by daily quotations, as in the other case. It will appear that export prices have been considerably lower for the last seven years than for the first seven, though *Chicago* prices have not, materially. I think this is mainly accounted for by the fact that export prices are ruled by the price of gold, which was considerably above par the first seven years. If this be taken into account, I think it is plain that wheat, on the whole, has not really declined in the second period of ten years.

5. The price of "No. 2 cash wheat" in Chicago has more influence on prices of good milling wheat in the great winter and spring wheat belts of the country (west of New York and Pennsylvania) than the export price. For many years I have noticed that at extensive milling and buying points in Ohio, like Cincinnati, Toledo, Cleveland, and especially Akron (our largest milling town), good milling wheat has usually averaged to farmers from 2 to 10 cts. higher than the Chicago quotations for "cash No. 2." Hence it is fair to conclude that good wheat in Ohio, Indiana, &c., will be sold by farmers at over \$1 per bushel. At least it has been every year in the past fifteen, including the year ending Aug. 1, 1884. The figures for that year are not given, as they are not yet all accessible. Thus it appears that *our supply*, and not the foreign demand mainly, has fixed the price of wheat for producers here. This will be shown by an examination of the next point.

is 33,046,000 and the average population is about 52,000,000 for the seven years, and we have, figuring as before:

Seed, 33,046,000 acres at 1½ bush.....	49,569,000
Bread, 52,000,000 people at 4½ bush....	234,000,000
Export.....	132,794,000
Total consumed.....	416,363,000
Total average crop.....	415,492,000

This leaves a very small apparent deficiency, and proves that the estimates of the total crops by the U. S. Agricultural Department for the past seven years have been very accurate.

But the main point, again, is that the export demand has taken *all we have had to spare*.

Compare each crop of the last seven years with its export, and you will see that *quantity to spare*, and not price, has regulated the quantity exported. Omit cyphers, and place the crop, exports and prices close together for examination, and we have:

Crop Year.	Crop in Millions.	Export in Millions.	Export Price.
1876-7	269	55	\$1.04
1877-8	264	90	1.06
1878-9	420	148	.78
1879-80	449	180	1.11
1880-1	498	186	.95
1881-2	383	122	1.19
1882-3	504	148	.88

Thus it is seen that as the crop has increased or diminished, the export has increased or diminished in almost the same ratio. That is, the old world has taken *whatever we had to spare* at about our prices, less difference in quality or in currency compared with gold.

7. Hence farmers need not worry about "over-production of wheat," or about "India as a competitor." Europe wants all we can spare of No. 3 and 4 wheat, and some No. 2, at fair prices.

The low price for the past year, in spite of the fact that the crop was nearly 100,000,000 bushels short, is, I think, accounted for mainly by the *poor quality* of the crop on the average. One of the leading millers in Akron told me it took, of last year's wheat, nearly five bushels *by weight* to make a barrel of flour, whereas of really plump berry it takes less than four and a half. My own last year's wheat, raised by a tenant, sown late on ground ill prepared, was not much better than screenings. I was glad to get 80 cents for it when good plump wheat of the year before sold the same day in the same market at \$1.05. This year the wheat is exceptionally plump, bright and dry all over the country, and the crop is simply a good fair average in quantity. Last year's short crop proves that we have not much surplus of old, and hence that the old world will need all this year's fine berry at fair prices.

I have never bought a "wheat margin" or a bushel of wheat to speculate on or sell again, and do not intend to do so, or to encourage any one else to gamble in grain. It is a miserable business, and farmers will do well to give it a wide berth. But they have a right to sell their own crops wisely, and I have compiled these statistics and explained them in order to aid them in so doing. Wheat at 75 or 80 cents is below

cost of production. There is no fear that it will long stay there.

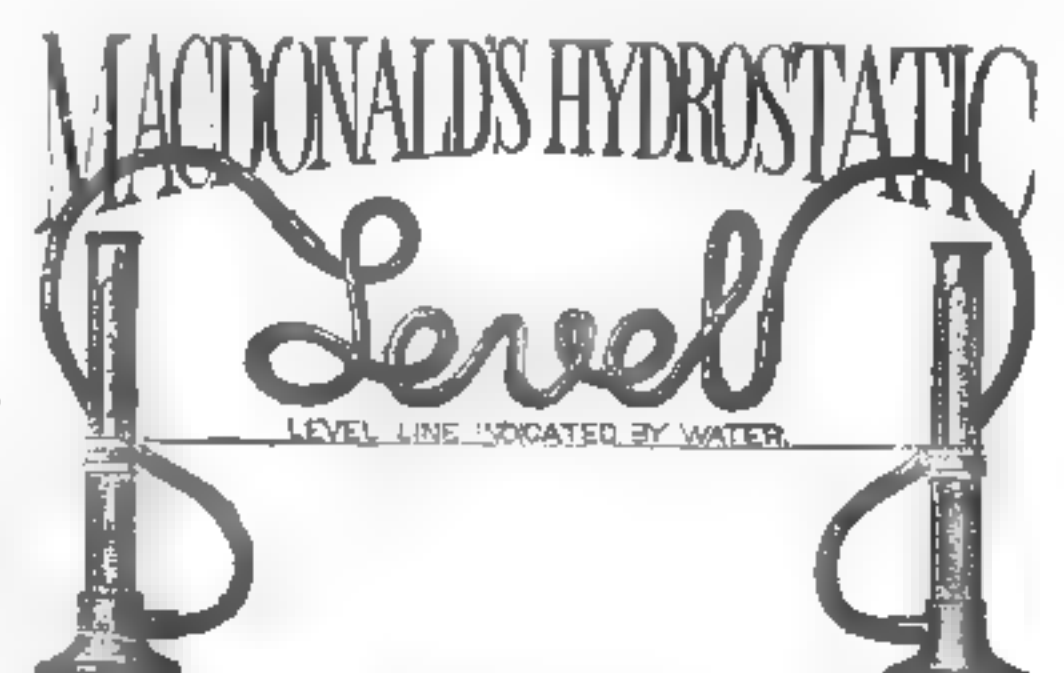
BUSINESS IN UTOPIA.

Jacob Schneider and Heinrich Baumgarten, two honest, hardworking Germans, settled on the clear fork of the Sandles in Gonzales County about the year 1848. They picked up some little knowledge of the English language from their scattered neighbors, and in 1850 were somewhat inoculated with the customs of the people.

Schneider sold a horse to Baumgarten on six months' credit, and got a neighbor to draw up the note for the money. Baumgarten signed the note, and then said to Schneider: "Vat I must do mit dese note?" Schneider said: "You geeeps der node, den you nose ven you must bays me."

Baumgarten said: "Dot ish goot."

At the end of six months Baumgarten brought the money and the note to Schneider and paid him the money, and said: "Now you takes de node, den you all times nosd de money ish paid."—*Pearsall News*.



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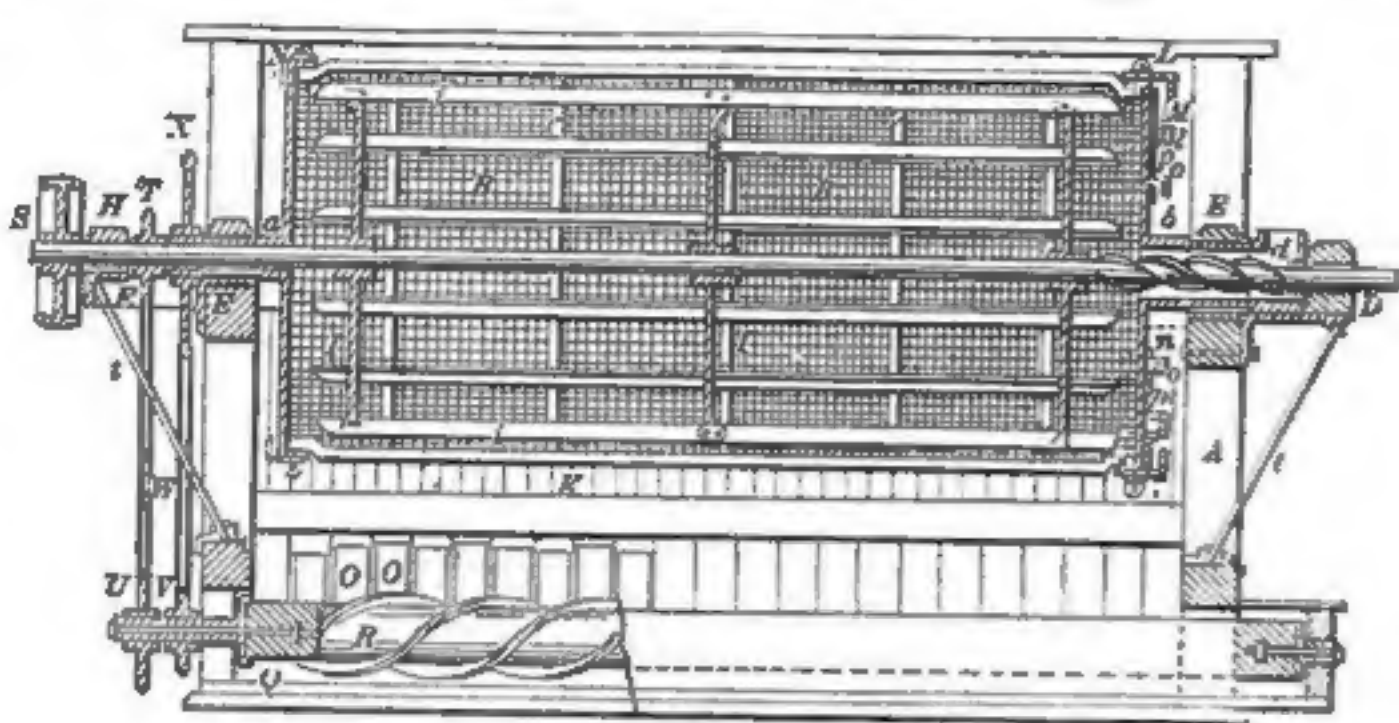
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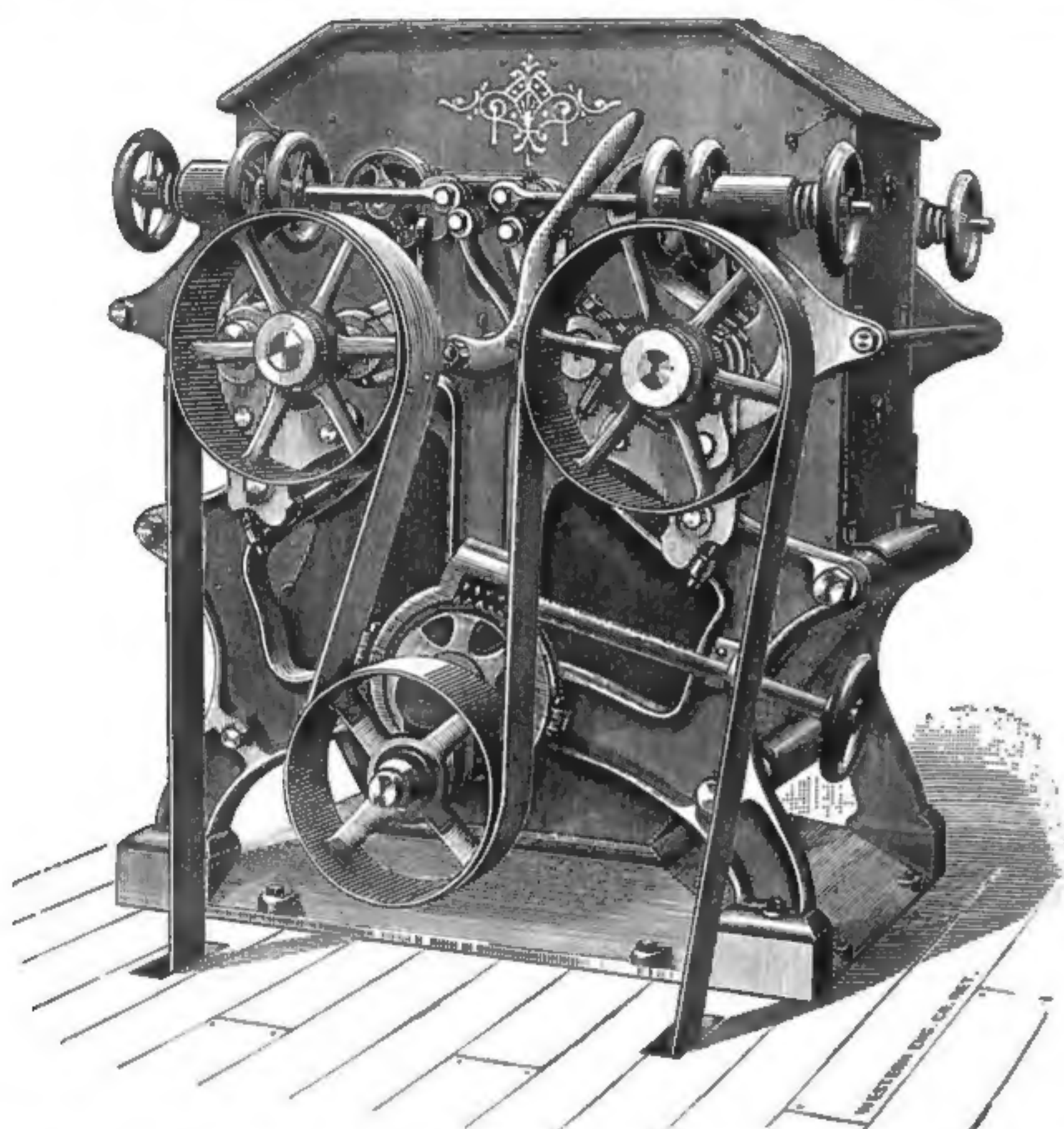


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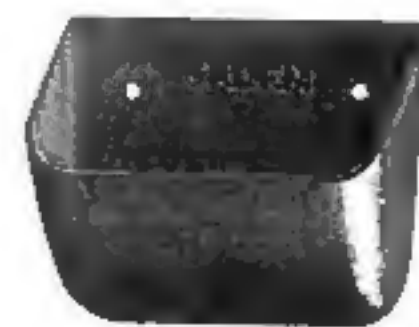
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Seamless Rounded Corners

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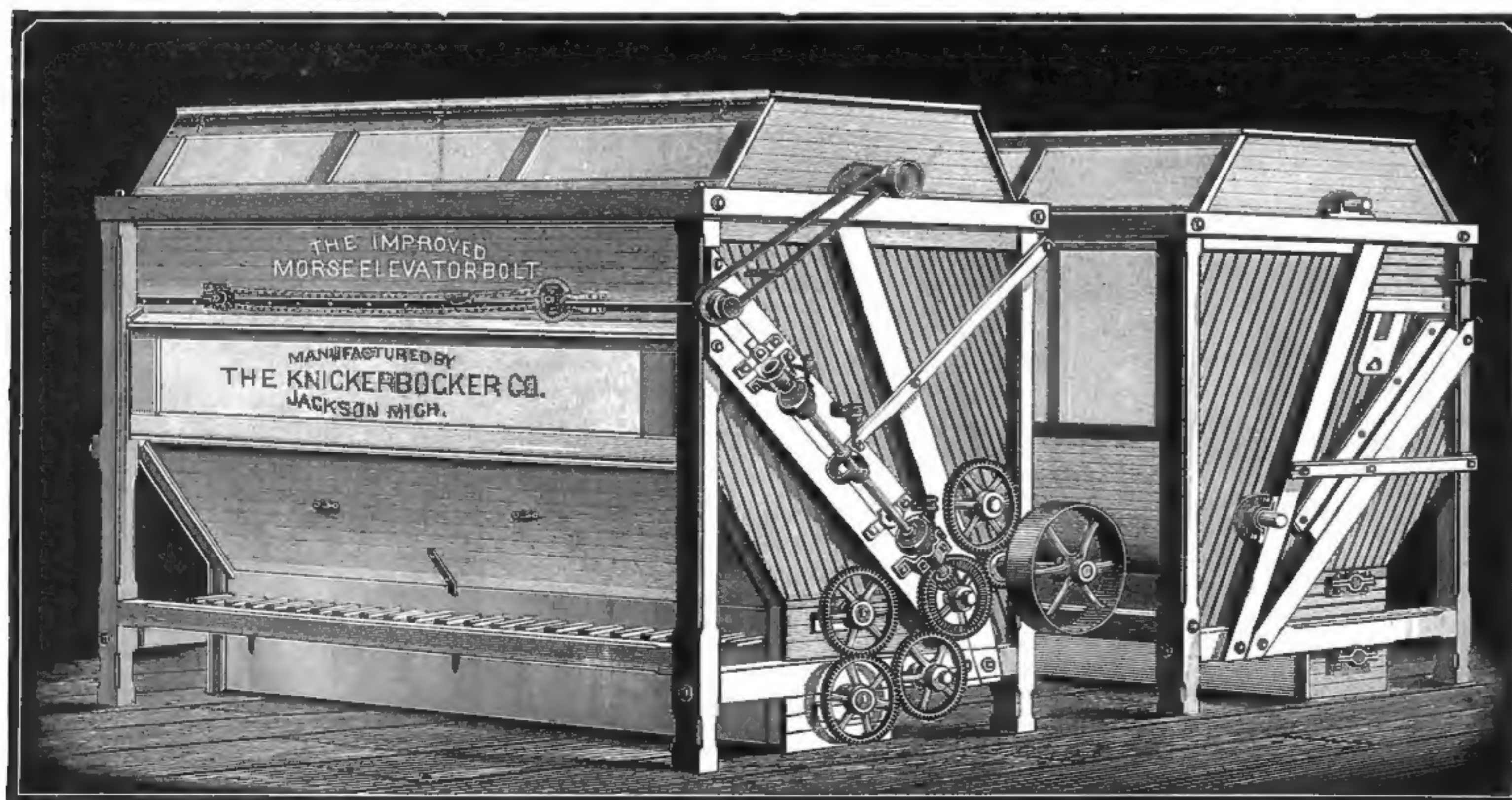
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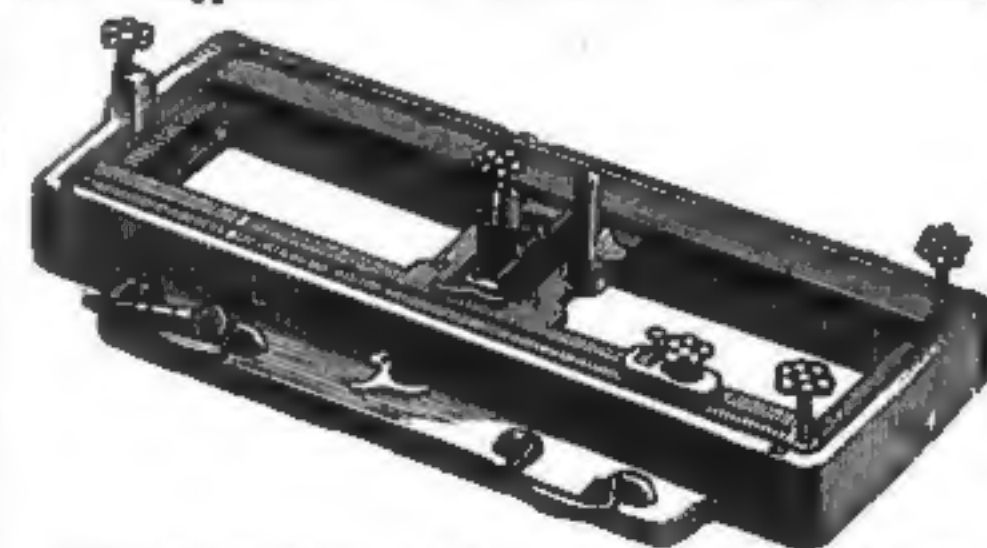


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Sole Manufacturer, Cambridge City, Ind.

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FIRST AND ONLY PREMIUM
AT THE
Millers' International Exhibition.



Office of THE MILLING WORLD.
Buffalo, N. Y., Sept. 3, 1884.

We can indicate the condition of trade in no better manner than quoting the New York *Commercial Bulletin* of this date. It says: The confusion of ideas as to the visible supply of wheat made it a little lively for the wheat traders to-day. The Chicago calculations struck this market in the forenoon with a surprise by indicating an increase of 640,000 bushels; nobody was prepared for such a showing and the market sold off sharply, with October opening at 92½c. and selling down to 91¾c, when there was a turn upward of ½c on shorts covering. There has been a fairly active speculative trade with a moderate business at a decline of ¼@½c, when holders took to asking last night's prices, which sent buyers out of the market; at the close there appears to be for cash wheat no change in value as compared with last week's figures, while options show a decline of ¼@½c, at which the speculative business stops for the day in a rather tame fashion. The interior movement of wheat is called moderate, while the seaboard clearances show up pretty well; the exports from the Atlantic ports last week to Europe were 143,000 bbls flour, 2,765,000 bush wheat and 263,000 bush corn, against for the previous week 145,000 bbls 2,905,000 bushels and 214,000 bushels respectively. Early in the day there was a rush to sell by local traders, with exporters bearing down all they could without selling much. This afternoon there is less bearish talk; late private cables are contradictory and vary all the way from weak to strong; the conduct of exporters indicates considerable foreign interest in American wheat at a little below present prices; exporters were quite in the buying mood at the slight concession that holders made earlier in the day. It is the undercurrent of interest manifested by exporters that furnishes the main brace to the market and led the shorts to cover in the after part of the day. There is a large supply of winter wheat flours pressing for sale on this market whenever the wheat market shows weakness, and, as to-day has been one of the weak days for wheat, the whole line of winters is showing irregularity and in some cases a decline of 5@10c, as in the case of flours that are without brand celebrity to help them off. The spring wheat flours, on the other hand, are in light supply, and therefore firmly held at former prices. Rye flours are quiet and a shade easier; \$5.40 is the top for anything less than very fancy. Bag meal is quiet, but firm. Corn goods are in moderate demand and steady. Mill feed is quiet and a shade easier.

FOREIGN EXCHANGE.

The market for sterling was dull, but steady, owing to the light supply of commercial bills. The posted rates closed at 4.84 for sixty days' and 4.86 for demand. The actual rates ranged: At sixty days' sight, 4.83@4.83½; demand, 4.85@4.85½; cables, 4.85@4.85½, and commercial 4.81½@4.81¾. Continental exchange very dull; francs, 5.21¼ and 5.18¾; reichsmarks, 94½@94¾; guilders, 39¾ and 40¾. The closing posted rates were as follows:

	60 days.	90 days.
London.....	4 84	4 86
Paris francs.....	5 19¾	5 18¾
Geneva.....	5 18¾	5 18¾
Berlin, reichsmarks.....	94½	95¾
Amsterdam, guilders.....	40¾	40¾

BUFFALO WHEAT MARKET.

Buffalo, Sept. 2, 1884.

Wheat market dull. Few sales made of No. 1 hard Duluth at 95c and No. 1 Regular a 90c. Millers holding off for lower prices. All our correspondents in Dakota and Minnesota say that the harvest is being secured in good condition. There has been some rain, but not enough to damage the crop. The prospect is that the wheat will soon move freely to market and sell here on a basis of 90c for No. 1 hard. Red winter on track, selling at 84c for No. 2. 87@92 for longberry. No. 1 white held at 86c; sales made at 85c, but don't think it was No. 1. Corn scarce, for carloads on track, No. 2 in store 56½c, No. 3 54, sample lots 52@53c. Oats dull, few cars old have

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FIRST AND ONLY PREMIUM
OVER ALL COMPETITORS!
PURCHASE ONLY
FROM RELIABLE DEALERS.

been received and sold at 36 for No. 2 mixed. Other grain nominal.

JAMES S. MCGOWAN & SON.

BUFFALO MARKETS.

FLOUR—City ground clear Northern Pacific spring \$4.75@5.25; straight Northern Pacific spring, \$5.50@5.75; amber, \$5.25@5.50; white winter, \$5.25@5.50; new process, \$6.25@6.75; Graham flour, \$4.50@5.25. Western straight Minnesota bakers, \$5.25@5.50; clear do, \$4.75@5.25; white winter, \$5.00@5.25; new process, \$6.25@6.75; low grade flour, \$2.50@4.00. **OATMEAL**—Ingersol \$5.75; Bannerman's \$6.00; Akron \$6.25. **CORN MEAL**—Market steady, with a fair demand. Coarse, \$1.15; fine, \$1.25 per cwt. **RYE FLOUR**—In fair demand \$4.00@4.25. **BUCKWHEAT FLOUR**—Demand fair at \$3.50 per cwt. **WHEAT**—Steady. Sales 8,000 bu No. 1 hard Northern Pacific at 95c cash; 10,000 bu do at 91c year; at the Call Board 95c asked cash, 98c bid to arrive, 91½c asked 90½c bid September, 98c asked 91½c bid October, 98c bid November. No. 1 regular offered at 90c. Nothing doing in either red or white winter. **CORN**—Demand moderate. Sales 10,000 bu No. 3 at 55c; 1,000 bu do at 51½c; four carloads and 200 bu do at 54c, and 3,500 bu sample at 56c; at the Call Board 57½c asked 56½c bid to arrive, 57½c asked 56½c bid September, 56c bid October. **OATS**—Steady. Sale one car old No. 2 at 38c, and four do new No. 2 white at 39½c. **BARLEY**—Season over; market nominal. **RYE**—Last sale of No. 2 Western was made at 68c. New State nominal at 60c.

CANADA'S HARVEST.

For two or three weeks past, says *The Monetary Times* of Toronto the satisfactory nature of the current harvest has been a topic of general remark. The yield of wheat, which is unusually good in Ontario, has, in the popular estimate, seemed to overshadow that of every other cereal. But there is no serious shortage any where, and the harvest may, it appears, be generally regarded as an abundant one. The Ontario Bureau of Industries has made a summary of the probable yield, and sends us a bulletin, dated the middle of August, from which we take the following:

The total yield of grain in Ontario for 1884, according to the conclusions of the Bureau, was 113,710,600 bushels, taken off 4,448,785 acres land as compared with 108,043,977 bushels cut from 4,588,909 acres in the previous year, a gain of 5,666,623 bushels on an acreage 140,000 less. An average of 20 bushels of wheat per acre is gratifying, surpassing as it does the census year, and the estimated Ontario average drawn therefrom. The fall wheat, says the bureau, shows 21½ bushels to the acre and the spring wheat 18½ bushels, the total quantity of wheat exceeding 1883 in the proportion of 31,730,344 bushels to 21,370,068 bushels. Barley, though sown somewhat less broadly, shows a rather better yield per acre, and nearly 18 millions of bushels are expected, against 18½ millions last year. The grain is heavy, but in certain districts somewhat dark in color. Close upon fifty million bushels of oats are expected, as compared with fifty-four and a half millions in 1883. It is not unlikely, considering the good effect of late rain in July, that this crop may "better expectation." The acreage of rye is limited, and the expected crop not much more than half that of 1883. Peas are a good crop, a "bountiful crop" says Mr. Blue, the pea bug having done much less harm this year than usual. We append the table of probable yield for the two years.

	1884	1883
Bushels.	Bushels.	Bushels.
Wheat.....	31,730,344	21,370,068
Barley.....	17,860,777	18,414,337
Oats.....	49,383,000	54,573,609
Rye.....	1,630,417	3,013,240
Peas.....	13,106,062	10,673,723

"The hay crop was injured to some extent by the frosts of the last week in May, and more seriously by the drought of June. The yield is estimated at 3,044,912 tons, or about 1,000,000 tons less than last year. The appearance of the corn crop is not promising, due partly to inferior seed, and partly to the low temperature prevailing throughout June and July. The fortune of the crop depends on the weather of August and September. The area planted is 174,834 acres. Beans have suffered from the drought and the cool weather, and they will mature a week or ten days later than usual. The plants, however, are strong and healthy, and being well loaded a good crop is likely to be gathered—the estimate being 552,953 bushels from an area of 24,877 acres. The reports of the root crops are generally favorable. Potatoes are excellent, and mangolds and carrots are fairly good. Turnips made slow growth at first, owing to the dry weather, but the recent rains have been very beneficial. The area in potatoes is 168,862 acres; in mangolds, 18,341; in carrots, 10,980; and in turnips, 104,108 acres. The total area in roots is 302,291 acres, or about 8,500 more than last year."

MEETING OF GRAIN OPERATORS.

At a meeting of grain operators held at Winona, Wis., all dealers on the Winona & St. Peter, Southern Minnesota, and the River Division of the Chicago, Milwaukee & St. Paul railroads were represented. The Minneapolis standard prices on hard wheat, and also the Chicago standard of prices on soft varieties of wheat, barley and seeds were adopted. The fact was brought out that there is no smut in hard wheat this year.

It was decided to make the price of hard wheat five cents per bushel more than No. 1 soft wheat.

The following grades were established for wheat and barley:

No. 1 hard wheat must be Scotch fife.

No. 1 regular wheat may be hard and soft wheat mixed, weighing fifty-eight pounds, and must be reasonably clean.

No. 2 consists of the best varieties of soft wheat.

No. 3 consists of soft wheat containing more or less smut.

No. 1 barley must be free from stain, sound, plump, and free from other grain.

No. 2 barley may be slightly stained but must be sound, plump, and free from other grain.

No. 4 barley must be sound and healthy, but may be deeply stained and may contain more or less oats.

NOTES.

A terrible plague of locusts has visited Central Spain. The damage to crops about Ciudad will reach ten million dollars.

At Emerson, Dakota, a stock company has been organized to build elevators and buy Minnesota and Dakota wheat and ship it via the Canadian Pacific to Port Arthur, and thence to England via the lakes.

The losses by fire at Duluth, on Aug. 23, are as follows: Little & Simonds' loss, \$110,000 to \$120,000; insurance, \$74,000. Cutler & Gilbert's loss, \$30,000; insurance, \$20,000. The mills will be rebuilt.

J. T. Elder, Mason City, Iowa, has bought of Allis & Co., of Milwaukee, Wis., a No. 2 four-break reduction machine and three double roller mills, and all necessary machinery to fit his mill up in good shape.

Ottawa reports contain statements showing an increase of \$100,000 in exports of United States produce from the Dominion during July last, as compared with the corresponding month of last year. This is accounted for by the large amount of traffic now passing out of the St. Lawrence route, owing to a reduction in tolls on the Welland and other canals. In the exports of produce of Canada there was an increase of over \$500,000.

Delano, Minn., is said to be one of the best locations for a number one flouring mill in the county. It has been over a year since the old mill was burned and no steps have been taken to replace it, says a local paper. Located as we are in the heart of one of the best farming countries in the State, and having a population of nearly one thousand inhabitants it seems as though we were entitled to a mill.

The new C. P. R. elevator, which stands at the entrance to Owen Sound harbor was completed a few days ago. The merchants of that town presented Mr. J. W. Ross, the gentleman who has had charge of the construction, with a handsome gold watch as a token of their satisfaction. The watch bore the following inscription: "Presented to W. J. Ross, by Owen Sound friends, on completion of C. P. R. Elevator, August, 1884." The elevator is ranked as one of the first in the Dominion; it has the facilities for elevating grain at the rate of 8,000 bushels per hour.

A new variety of wheat is reported from western Bohemia, which is attracting the full attention of wheat growers. It is known as the "Surprise Hybrid Wheat," and the size and quantity of its grain and straw is said to be almost incredible. So far it has been used only experimentally, as the first seed was placed in the market after a long series of experiments by Mr. Bahlson, of Prague, during 1883, but in that year it resulted in a yield of about 82 bushels to the acre. The harvest of the present year from this prolific variety has not yet been published, but the indications, we are told, are fully up to last year's standard and an equally large yield can be expected.

In the United States is consumed about 150,000,000 pounds of starch per annum. During

the year ending July 1, 1883, there was exported from the United States 7,033,715 pounds of starch. The larger portion of this starch is made from Indian corn, though wheat and potatoes are used in limited quantities. Indiana takes the lead in this industry, producing nearly one-third of the total amount of starch made from corn. There are twenty-four factories in this country engaged in the production of starch from corn. Indiana claims eight of these factories. The total amount of starch from corn made by these mills has recently been estimated at 200,000,000 pounds per year.

At a meeting of the joint committee of the New York Produce Exchange, held on August 25, to propose the grades of wheat to be established for the ensuing crop year. It was resolved that grade No. 2 red winter shall conform to the following description: "No 2 red winter wheat shall be sound, dry and reasonably clean, weighing not less than fifty-eight and a half pounds, Winchester standard, and shall not contain over 10 per cent of white wheat." The abolishment of the type sample heretofore known as "the bottom of the grade," was recommended, and also that the inspectors grade wheat in accordance with the above description. A minority dissented. At the regular meeting of the grain trade in the Produce Exchange the recommendations of the committee were adopted.

A Chicago exchange gives the following as showing the receipts and expenditures of a 40,000-bushel vessel at two cents per bushel:

	Expenditures.	Receipts.
Forty thousand bushels at 2 cts.	—	\$800
Towing to elevator	\$ 50	—
Weighing	6	—
Trimming	40	—
Towing through St. Clair and Detroit rivers	146	—
Towing at Buffalo	30	—
Elevating 40,000 bushels at ½ cent	50	—
Shoveling 40,000 bushels at \$3.50	140	—
Weighing out	6	—
Pay of captain	35	—
Pay of mate	25	—
Five men at \$1.50 per day	20	—
Cook	15	—
Clearances, etc., at Chicago	10	—
Charter of a vessel	20	—
Provisions	45	—
Insurance on vessel	80	—
Total	\$793	\$800

As a result of the conference between the boards of trade of Minneapolis and Duluth, the latter board has adopted some new rules, by which No. 1 hard is to be composed mostly of Scotch fife. Wheat containing a large portion of blue stem, and in fact nearly all dark colored plump wheat has been graded as hard, while it has been excluded from the hard grades at Minneapolis. A new grade has been established called No. 1 Northern, like No. 1 hard except that it is composed of the hard and soft wheats. The only point the board did not fully settle was in regard to smutty wheat. At Minneapolis all wheat containing smut is graded as rejected or condemned, which is really no grade. At Duluth, wheat containing a small proportion of smut is graded as No. 2 or even No. 1. Duluth wants a grade established which will admit this smutty wheat, for the reason that we have no sample market where this ungraded stuff can be sold. Nearly all Duluth wheat is sold in the Eastern markets by grade, and if smutty wheat is not allowed to go into the regular grades, dealers will have some difficulty in disposing of it. At Minneapolis this ungraded wheat is sold by sample on the open board, and for that reason is kept out of regular grades. It is probable that this question will be satisfactorily arranged at a later conference.

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 Yours, etc.,
 R. H. FAUCETT, PRES.

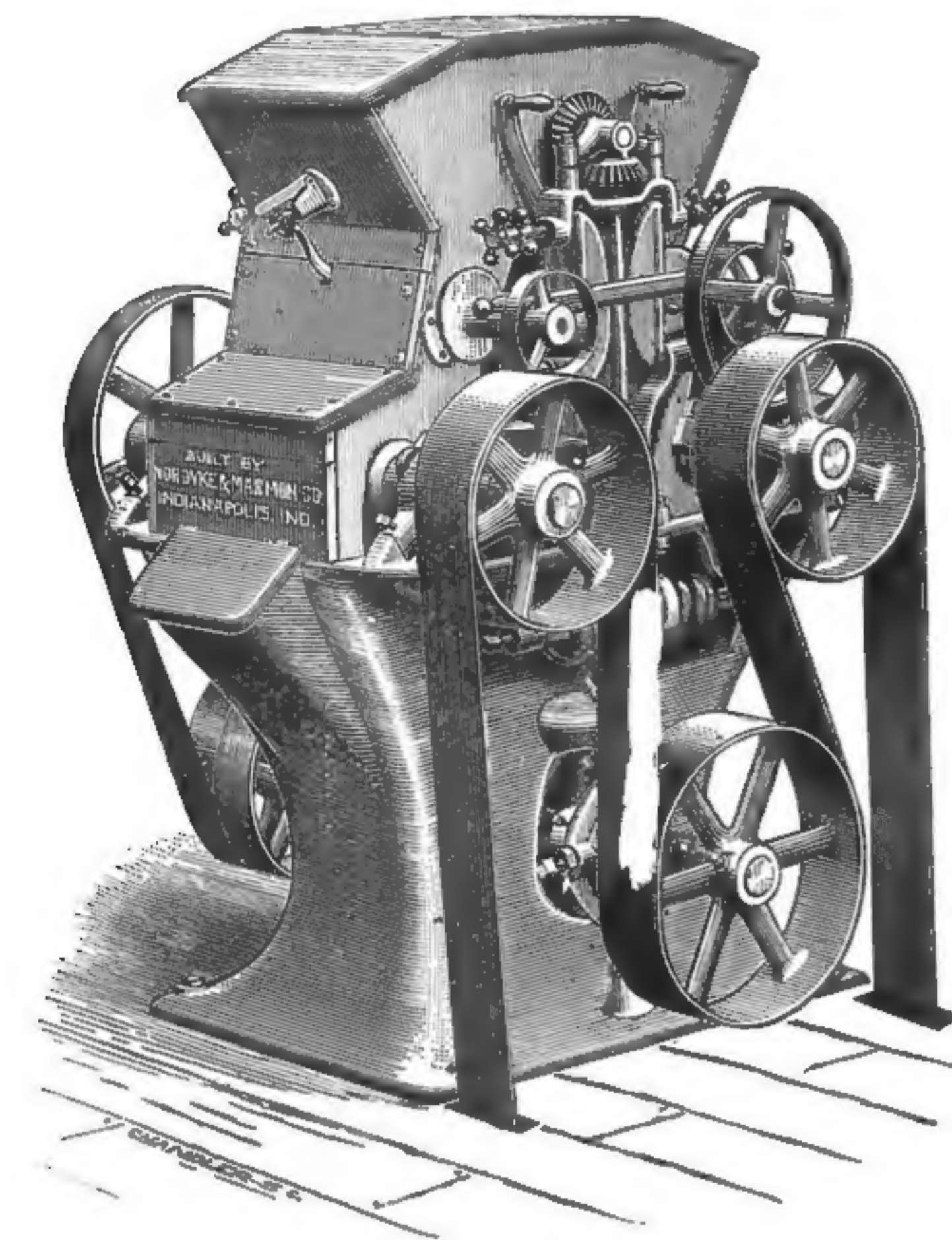
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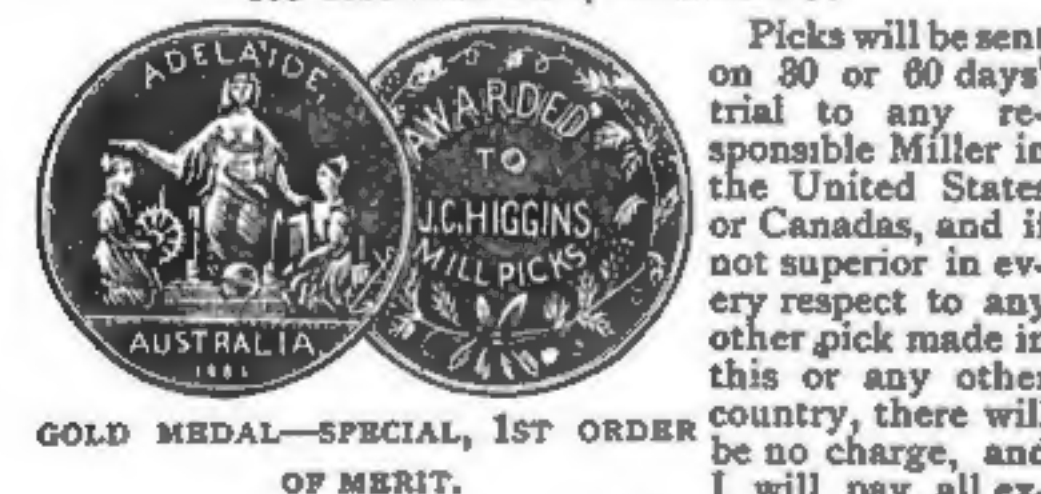
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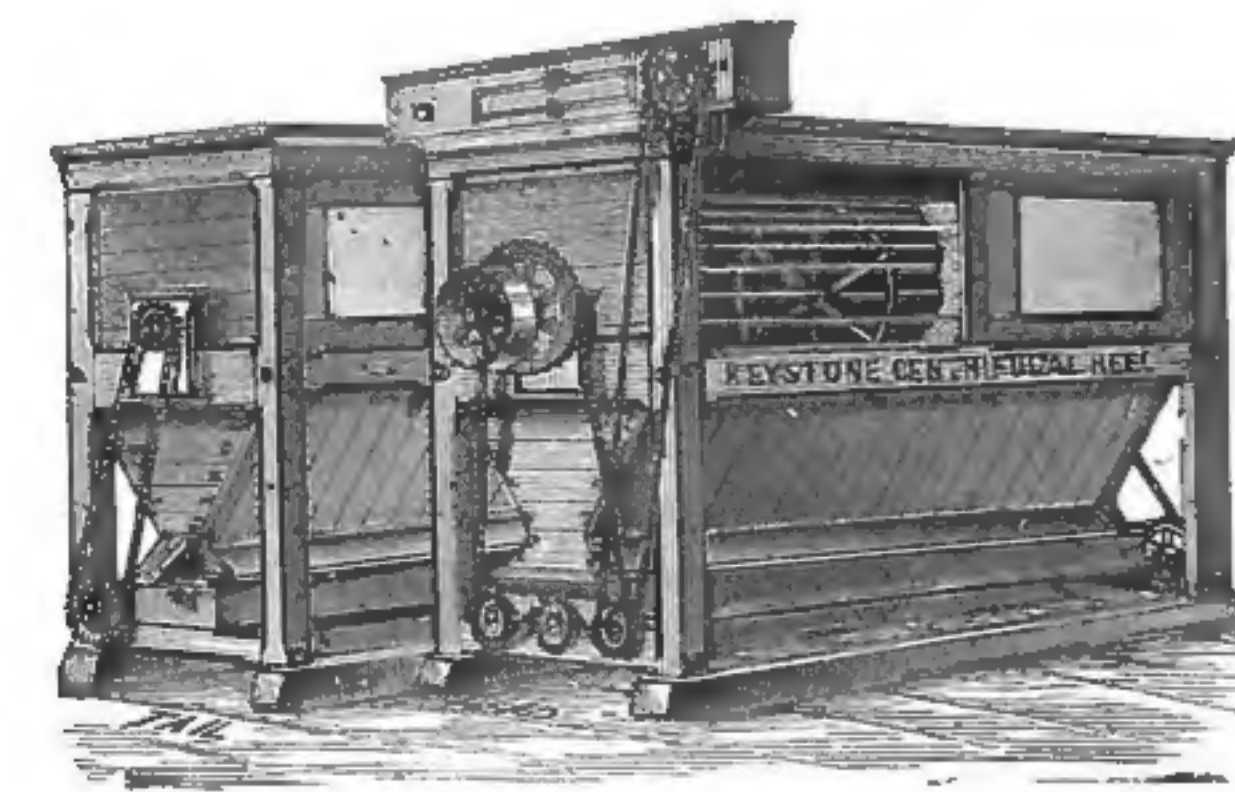
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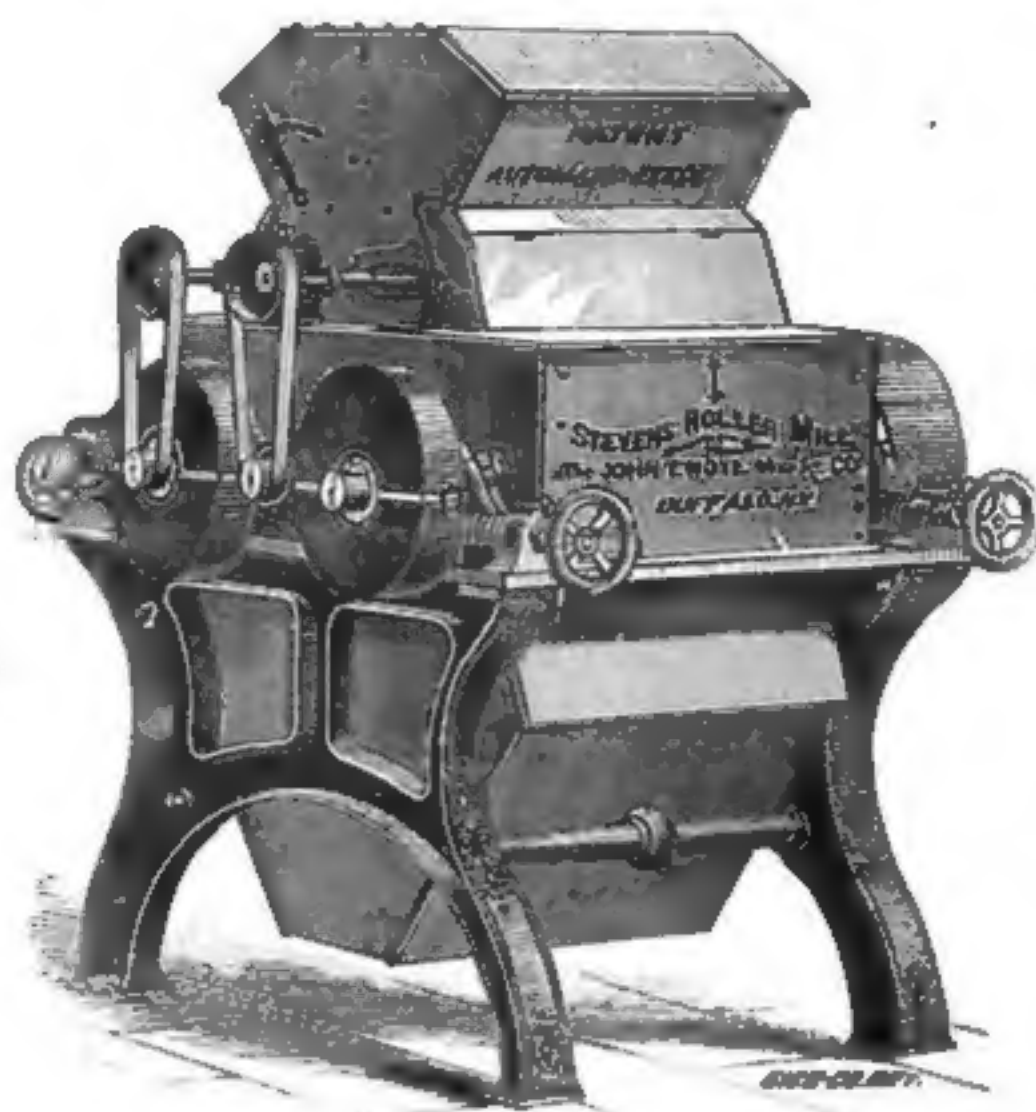
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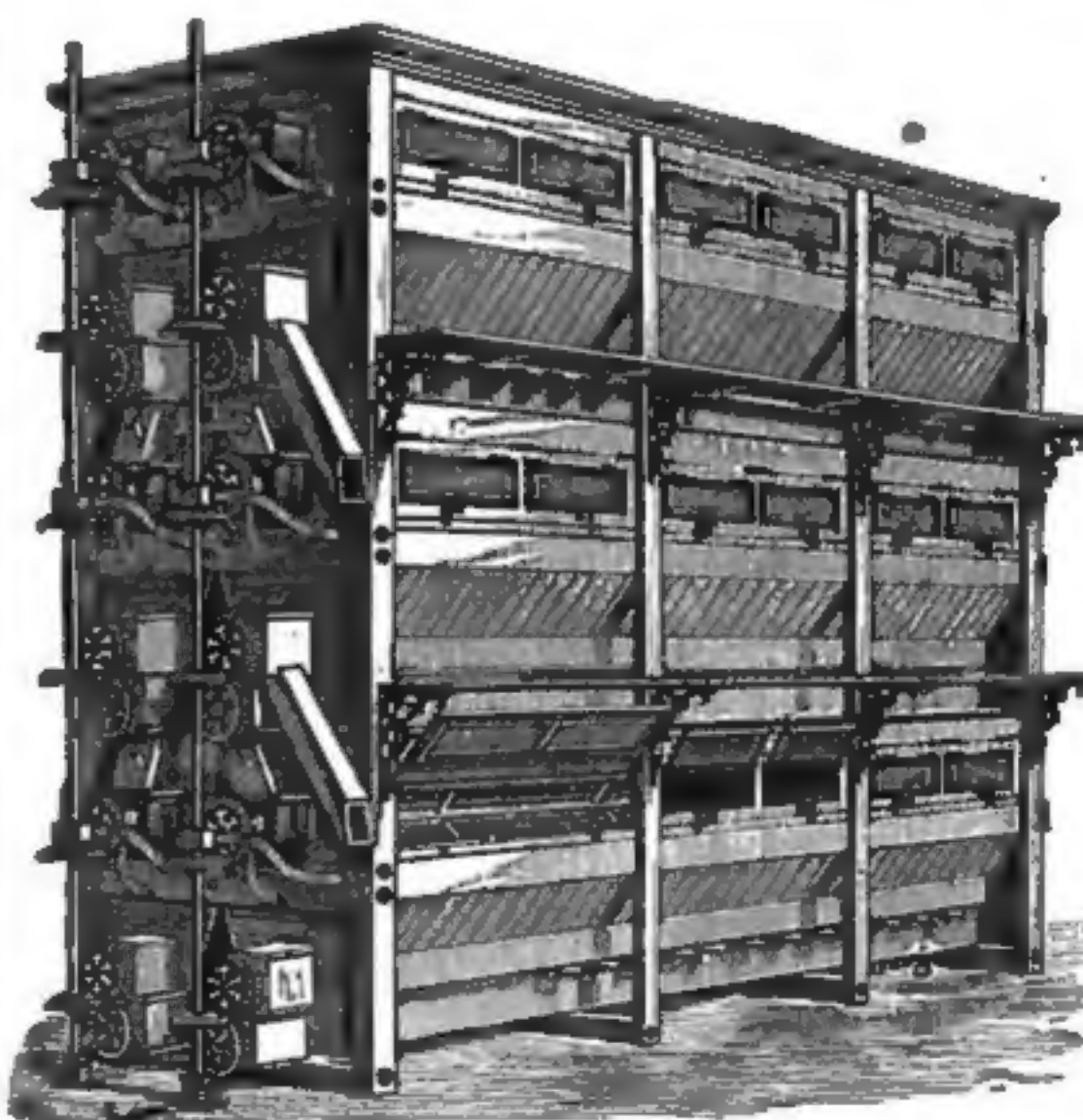
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